

Hitchcock's Machine Tool Blue Book

JULY, 1932

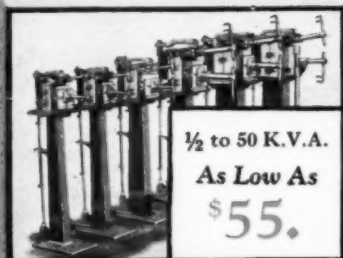
TWENTY-SEVENTH YEAR



Now . . .

A Size for Every Need

SPEED SPOT WELDERS



$\frac{1}{2}$ to 50 K.V.A.

As Low As

\$55.

OVER 20,000 IN USE

Speed Spot Welding eliminates the use of screws,
bolts, rivets, brazing or soldering

Submit Samples for Production Estimates and Details

EISLER ELECTRIC

763 S. 13th Street

NEWARK, N. J.

Distributor and Dealer Connections Desired

PUBLISHED AT 508 So. DEARBORN ST. CHICAGO

"Cost per Hole!"

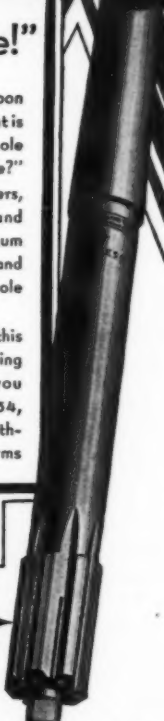
The only sound basis upon which reamers should be bought is "How much will they cost per hole reamed during their useful life?"

Peerless High Speed Reamers, for production reaming, stand without a peer for the maximum number of holes per reamer, and most economical cost-per-hole reamed.

If you are interested in this modern, scientific way of buying reamers, ask us to send you Performance Digests Nos. 53, 54, 55, 64, 78, 84, 85 and 86, together with complete instruction forms for making a comprehensive reamer test in your own shop.



TRADE MARK
REG. U.S. PAT. OFF.



The **CLEVELAND**
CLEVELAND

TRADE MARK REG. U. S. PAT. OFF. AND FOREIGN COUNTRIES

**TWIST DRILL
COMPANY
CLEVELAND
NEW YORK · CHICAGO · LONDON
SAN FRANCISCO**

Hitchcock's **Machine Tool Blue Book**

**Selected
Circulation**

**25,200
Monthly**

JULY, 1932

TWENTY-SEVENTH YEAR

Double-Barreled Benefits

Yes, its benefits are double-barreled . . . its service is broader and its costs are lower.

SERVICE—More copies of the "Blue Book" go to concerns worth \$20,000 to \$1,000,000 than the total A B C circulation of any of the large papers in its field . . . a startling and significant fact which few people realize.

COSTS—For each dollar of cost the "Blue Book" delivers a full-page advertisement to 625 responsible buyers of metal-working machinery . . . a cost that is unequalled for the service rendered.

And it works . . . it is practical . . . it is effective . . . it delivers the goods . . . and it makes the dollar go farther.

Your competitors are retrenching just at a time when buyers are investigating and planning millions of dollars worth of orders for release at the opportune time.

RIGHT NOW, while your competitors are retrenching and buyers are planning . . . right now is the time to make your bid for that business, by taking advantage of the double-barreled benefits afforded by the "Blue Book" service . . . It means so much to you, and the cost is hardly more than nominal.

Published By

Hitchcock Publishing Co.
508 S. Dearborn St., Chicago, Ill.

Consult the Classified Finding Index for your requirements



2 1/2 times faster

-Roll-Formed!

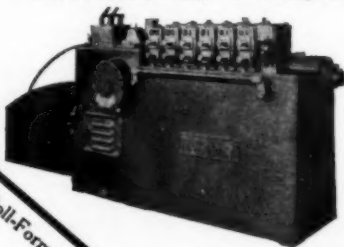
ROLL-FORMING provides the speed that brings down costs. The metal furniture section shown above is a typical example of the savings thus made possible.

Brake-formed, three operations were required. Two operators produced 200 ten-foot lengths per hour. Formed on a McKinney Roll-Forming Machine, the same section is now produced at the rate of 500 lengths per hour, in one operation and with only one operator!

McKinney Roll-Forming is applicable to a wide range of materials and to an unlimited variety of sections. Let McKinney engineers advise you whether the mouldings, tubing, channels or other similar metal products that you produce or use can be produced by roll-forming. If they can, very definite savings can be accurately predetermined and enjoyed. Submit samples or blueprints—today!



The McKinney Tool & Mfg. Co.
1684 Arabella Road, Cleveland, O.



Send latest bulletin on Roll-Forming
Equipment to:

Name

Company

Address

NOC-OUT

Automatic Roll Feeds For Punch Presses Speed Production

Secure automatic feeding with its many advantages for your punch presses by installing the NOC-OUT Automatic Reversible Feed. This small unit automatically feeds metal, paper, brake lining or any other stock from coils in lengths from 0 to 30 inches per stroke of press.

FASTER — ACCURATE — ECONOMICAL

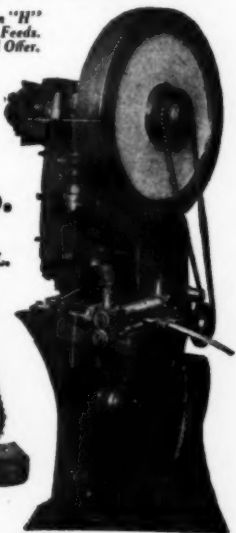
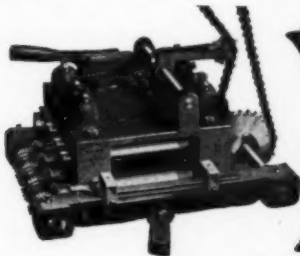
Labor is saved, production is increased and your men safeguarded with this feed. Automatic feeding means full speed production all day long —there are no "let downs" as it eliminates the human element whose energies are limited. Can be readily installed on any press.

We will gladly send you a copy of Bulletin "H" describing NOC-OUT Automatic Roll Feeds. Write for it and details of Our Free Trial Offer.

We design and build progressive and automatic dies for high speed production. Submit samples of your stamping for estimate.

Witteck Mfg. Co.

4309 W. 24th Place,
Dept. "H" CHICAGO, ILL.



FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

**Made in three
sizes of single
and multiple
spindle models**

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

KRW "Bench Type" ARBOR PRESS



No. 37D

\$28.50

F.O.B. FACTORY
ARCADE, N. Y.

Shipping Weight
140 lbs.

*Write for special
circular, just off
the press, cover-
ing K R W Hy-
draulic Arbor
Presses, air and
oil operated.*

Every shop needs one of these presses to handle hundreds of jobs now done with vises and sledge hammers. They soon pay for themselves in time and labor saved.

The K R W "Bench Type" Arbor Press is oversize in every particular. The throat is extra deep, taking work up to 13 inches in diameter. The ram is $1\frac{1}{2} \times 1\frac{1}{2} \times 17$ inches. Largest arbor is $1\frac{1}{2}$ inches. The height is 22 inches. Can be conveniently mounted on end of work bench, as it takes up a space of only 8×20 inches.

K. R. WILSON

10-16 Lock Street, Buffalo, N. Y., U. S. A.

EXPORT DEPT.
126 Liberty St., New York

WEST COAST BRANCH
647 Mateo St., Los Angeles



ELCO-SCREWS

REDUCE ASSEMBLY COSTS

MACHINE SCREWS
MACHINE SCREW NUTS
WOOD SCREWS
LAG SCREWS
CAP SCREWS
PIPE PLUGS

Leading Industrial and
Automotive Concerns

SPECIFY

ELCO SCREWS

for Dependable Quality and un-
usually Prompt Service.

Standard sizes are shipped from
stock in any desired quantity.

All inquiries receive prompt, in-
telligent attention.



Write for Samples and Prices

ELCO TOOL & SCREW CORPORATION

1808 Broadway, ROCKFORD, ILLINOIS

"It Pays to Use Good Screws"

A large industrial machine, likely a steam-powered press or pump, featuring a vertical column, a large flywheel, and a horizontal worktable. The machine is constructed from dark metal and stands on a heavy, square base. A large flywheel is visible on the right side, connected to a vertical shaft. The machine has a complex arrangement of pipes, valves, and a horizontal worktable at the top. A large, dark, rounded object, possibly a boiler or a tank, is attached to the left side of the vertical column. The machine is shown in a side profile, facing right.

with a

This Machine Will Cut YOUR Costs

WITHOUT change or adjustment, the No. 2 magazines and drives any three consecutive sizes of wood or machine screws from Nos. 6 to 14 inclusive. It has many improvements and refinements, chief of which is the Chuck with Equalizing Jaws. Drives screws to center of an 18" circle in work not over 18" high, and gap column can be furnished to drive screws to center of 48" circle in work not over 6" high. Quickly interchangeable sets of parts can be furnished to increase range of screws driven—no change necessary for different length screws.

Write for complete information giving length and gauge of screws used, and we'll send facts and figures that will surprise you.

The Reynolds Machine Company
Dept. H. H. Massillon, Ohio

"THE MODERN WAY TO DRIVE SCREWS"

— BELOIT — ALLIGATOR SHEARS

Proof is in Performance

THE acid test of any machine is its ability to stand up under the day-by-day demands of shop routine. That BELOIT Alligator Shears meet this exacting test is evidenced by the following:

"Regarding the No. 46 which we have in use, we wish to express our satisfaction with its operation. It has never given us any trouble whatsoever and handles such lining as $6 \times \frac{3}{4}$ " heavy duty with ease."

"I wish to inform you that the No. 46 has given us entire satisfaction and all the time it has been in operation (since 1921), we have not spent any money on repairs which speaks highly for this machine."

Write for Complete Information

**Name
furnished
upon
request*



*Write Today
For Complete
Catalog of the
BELOIT Line*

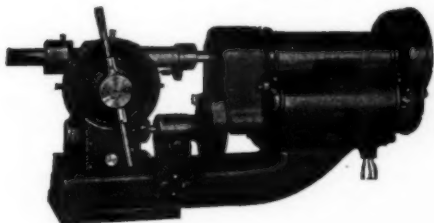
HENDLEY & WHITEMORE CO.
100 So. State St., BELOIT, WIS.

PUNCHES — SHEARS — BENDING ROLLS

DO YOU KNOW

about the most modern practice in selecting equipment for small hole drilling and tapping, when production requirements are high ?

HERE'S THE ANSWER!



Avey MOTOR DRIVEN DRILLING UNITS are a standard product—built in various types and sizes—and they can be mounted to suit your work.

Our engineering department is at your service. Let us figure on your drilling problems, and show you the way to lower costs.

THE AVEY DRILLING MACHINE CO.
CINCINNATI, OHIO

This cut shows our **Rapid Clamping Drill Jig** — tooled complete for drilling a large hole in a Ford steering knuckle.



Send for our new catalog No. 3 showing the different set ups of our drill jigs.

SIEWEK TOOL COMPANY
10228 Woodward Avenue, Detroit, Michigan

WARDWELL

Combination Grinder

FOR
Bands, Hacks and Circular Saws

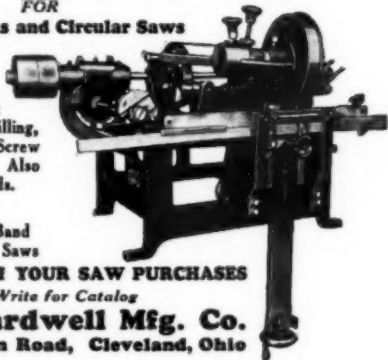
Model E-c
Salvages all Milling,
Slitting and Screw
Slotting Saws. Also
Hacks and Bands.

And all
Circular and Band
Wood Cutting Saws

SAVE 75% of YOUR SAW PURCHASES

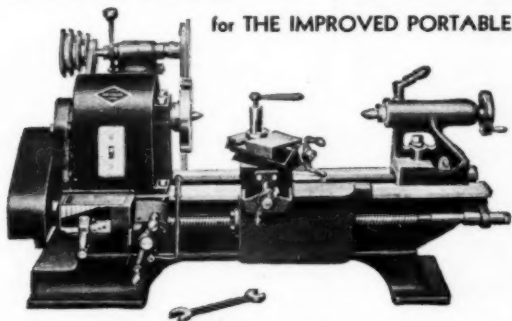
Write for Catalog

The Wardwell Mfg. Co.
3165 Fulton Road, Cleveland, Ohio



DEALERS WANTED

for THE IMPROVED PORTABLE



ARTISAN Bench Lathe

STURDY—RIGID—VERSATILE

THE IMPROVED ARTISAN BENCH LATHE is extremely versatile and will handle a greater variety of work than any other bench lathe made. Bar stock or automobile axles up to $1\frac{5}{16}$ " diameter can be passed through the spindle for tapering or threading; passenger car axles over 30" long can be machined. Right or left-hand screw threads can be cut 8 to 224 per inch, including $1\frac{1}{2}$ thread for pipe work.

Screw Cutting

Quick Change

"V" Belt Drive

11" Swing—18" between Centers

8 Spindle Speeds

Back Geared

$\frac{1}{3}$ H. P. Reversible Type Motor

Power from Light Socket

Write for Full Details and Low Price

ROCKY MOUNTAIN STEEL PRODUCTS
INC.

1358 Wall Street,

Los Angeles, California

Also Manufacturers of the "Improved ARTISAN" Master Lathe,
floor type model, 36" between centers, swings 16" in gap.

Billions of Dollars for dependable employment

LARGE sums of money have been mobilized through the open market operations and the loan and discount facilities of the Federal Reserve banks, and by loans through the Reconstruction Finance Corporation.

Here is a great credit reserve—totalling billions of dollars—awaiting dependable employment.

Just as fast as suitable jobs can be found for this credit, confidence will be strengthened, trade will quicken, and men will be returned to work.

To help speed the effective employment of this huge army of credit dollars, committees of

leading industrialists and bankers have been appointed by the Governors of the twelve Federal Reserve Banks—Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Dallas, Kansas City, Minneapolis and San Francisco.

Like the divisional staffs of a great army, these committees will work to consolidate our position, and strengthen and strengthen our lines, so that a broad advance can be made.

Theirs is no simple task, but the readiness with which these industrial and banking leaders are joining together, and cooperating with national authorities, is a very encouraging factor in the present situation.



Housing Construction—An Opportunity

In previous depressions, a resumption of construction activity has been an important and vital factor in encouraging and stimulating business improvement. It assures employment of large numbers of men, not only directly, but also in the industries of supply.

There is undeniably an opportunity in many communities for construction of homes on a sound and economic basis, as well as a definite need for home repairs and improvements, and these matters will undoubtedly have early consideration.

The bringing together of worthy domestic building projects and substantial financing is typical of the many possibilities for beneficial action open to these committees in a wide range of fields.

The National Publishers' Association

"As the most nearly self-contained nation, we have within our own boundaries the elemental factors for recovery."

(From the Recommendation of the Committee on Unemployment Plans and Suggestions of the President's Organization on Unemployment Relief)

VISE

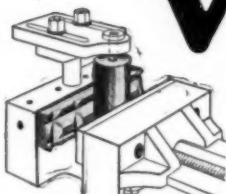


Fig. 3. V-Jaw for Round Work

**All Vises are drilled
and tapped to take
our Standard JIG
ATTACHMENTS**

ANY VISE WILL PAY

Send for Circulars

THE GRAHAM MFG. CO.
70 Willard Ave., PROVIDENCE, R. I.



Fig. 2
Without Jig
Attachments

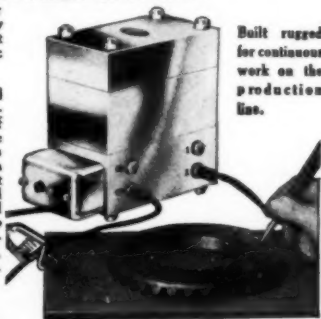
For Light and Heavy Etching

With 24 Stages of Control.

The LUMA Master Etchtool fulfills every marking requirement that can be done by an electric Etching outfit.

A Production Tool with as many as 24 different stages or varieties of control for regulating the depth of marking, this tool can be used for extra light marking of machine cast scales, micrometers and fine tools or can be used for *extra heavy and deep* marking of rough and unfinished iron, cast iron, forgings, steel plates, etc.

Send for circular giving complete data and details of this modern instrument.



**Built rugged
for continuous
work on the
production
line.**

LUMA ELECTRIC EQUIPMENT CO.
DEPT. H.—Main P. O. Box No. 132—TOLEDO, OHIO



ARMSTRONG

TRADE MARK REG. U. S. PAT. OFFICE

Drop Forged, Carbon Steel

WRENCHES

NEW 1932 Designs

The Best
Wrenches have
been made still Better

Admittedly the "best" wrenches, ARMSTRONG Drop Forged Wrenches have been made still better with new designs and a new Carbon Steel. Jaws are lean and tapering, will take a firm grip where other wrenches cannot reach. Handles are longer, increase leverage. The new steel makes these wrenches stronger than any carbon steel wrenches previously made. 37 types, all sizes—1 quality. Singly or in Sets.



Make This Test

Send for a 1932 ARMSTRONG Wrench on "memo" bill, for test. If it isn't a better wrench than any you have ever used send it back.

Write for
Catalogs

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
308 N. Francisco Ave., CHICAGO, U. S. A.

1905



1932

FLEXIBLE SHAFT MACHINES

FOR MANY OPERATIONS

YOU CAN'T GO WRONG WITH THE STRAND

Type MP-5



THEY MAKE GOOD

MANY TYPES AND SIZES

$\frac{1}{8}$ to 2 H. P.

HORIZONTAL

OR

VERTICAL

SEND FOR CATALOG

Manufactured By

N. A. STRAND & CO.

5001-5009 N. Lincoln St.,

Type ML-6



Chicago, Ill.

Grant **NOISELESS SPINNING** Riveter



Highest Speed
Perfect Uniformity
Lowest Cost

A Grant Riveter places and finishes one rivet every second it is in operation.

It will finish rivets to the exact degree of tightness or looseness that you desire, and the heads are perfectly formed and highly polished.

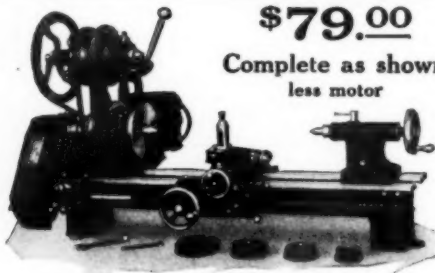
The Grant Riveter keeps operating costs at a minimum, and is so simple that unskilled labor can operate it as effectively as can skilled machinists.

Send samples of your riveting work and ask for a catalog

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

\$79.00

Complete as shown
less motor



9-inch Screw Cutting

BENCH LATHE

Compound drive—Reverse feed
Threading dial

Write for Circular

ATLAS PRESS CO., - Kalamazoo, Mich.

VANDERBEEK UNIVERSAL JOINTS



Are used in all kinds of machines where high grade joints are needed. The very highest grade of workmanship goes into our joints.



We specialize on Joints

for instrument work and light drive as well as airplane use. Hundreds of thousands of Vanderbeek Universal Joints are in daily use.

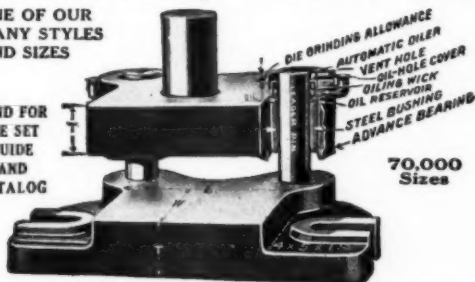
Write for Prices and State Your Quantities

American Tool Works, Inc.
25 High St., Hartford, Conn., U. S. A.

Automatically Oiled Die Sets

ONE OF OUR
MANY STYLES
AND SIZES

SEND FOR
DIE SET
GUIDE
AND
CATALOG



E. A. BAUMBACH MFG. CO.

GENERAL OFFICE AND WORKS

1810 South Kilbourn Ave., CHICAGO, ILLINOIS

Sales and Engineering Offices—Principal Cities U. S. A. and Canada



Analysis of Circulation of HITCHCOCK'S MACHINE TOOL BLUE BOOK

By Dun and Bradstreet Ratings

(Corrected to December 1st, 1931)

To domestic concerns, and superintendents, works managers, production engineers, master-mechanics, etc., in such concerns rated at—

Exceeding \$1,000,000.....	2,181
\$500,000 to \$1,000,000.....	1,603
\$300,000 to \$ 500,000.....	1,529
\$200,000 to \$ 300,000.....	1,367
\$125,000 to \$ 200,000.....	1,784
\$ 75,000 to \$ 125,000.....	1,985
\$ 50,000 to \$ 75,000.....	1,417
\$ 20,000 to \$ 50,000.....	2,992
\$ 10,000 to \$ 20,000.....	1,983
\$ 5,000 to \$ 10,000.....	1,625

TOTAL to Private Concerns of over \$5,000.. 18,466

Steam and Street Railway Mechanical and Purchasing Officials, Government and Municipal Plants, Technical Schools, Electric Power Plants, Selected Foreign Importers and Users, Etc.,.....	3,411
---	-------

TOTAL to Buyers of Known Responsibility.. 21,877

*Concerns quoted in Dun or Bradstreet, but without Capital Rating..... 2,116

Concerns not yet in either Dun or Bradstreet, which includes new industries..... 961

Concerns rated \$3,000 to \$5,000..... 465

Miscellaneous 195

TOTAL CIRCULATION 25,614

*This group includes a considerable number of large concerns, and some small ones of high credit, whose capital rating is not given by either of the commercial agencies.

**No. 8 IMPERIAL
PUNCH WITH
BASE**

Operating handles
will not become
disengaged

Can Be Furnished
With or Without
Base

CAPACITY
 $\frac{1}{4}$ " hole through $\frac{1}{4}$ "
iron.

Weight, 16 lbs.
Length over all,
 $25\frac{1}{2}$ ".



**No. 50 ANGLE IRON
MITRE NOTCHER
and No. 51 ANGLE
IRON BENDER**

CAPACITY $2"x2"x\frac{1}{4}"$
ANGLE IRON OR
SMALLER.

Weight of Mitre Notcher
only 55 lbs.

Weight of Mitre Notcher
Bender only 43 lbs.

**ANGLE IRON
SHEAR No. 4
Drop Forged**

Capacity $2x2x\frac{1}{4}$
Angle Iron
Weight 44 lbs.



Write for Catalog on Entire Line

WHITNEY METAL TOOL COMPANY
95 FORBES ST., ROCKFORD, ILL.

**CULLMAN
SPROCKETS**

—For—

**Block, Roller and
Silent Chains, over
45,000 in Stock.**

*Send for our new
160 page book.*



CULLMAN WHEEL COMPANY

1359 Altgeld St.,

3-1

Chicago, Ill.

Speed Reducers—Flexible Couplings—Lathe Drives

Improved Thompson Universal Grinder

Self-contained and motor driven, this standard Grinder combines efficient means for the rapid and accurate production of every grinding operation required in a machine shop.

All standard machines equipped with auxiliary independent coarse cross feed for surface grinding.

Capacity 12"x36"

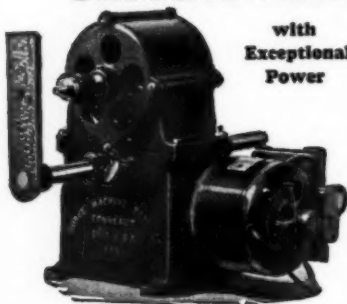
**The Thompson
Grinder Co.**

1534 West Main St.,
SPRINGFIELD, OHIO



A NEW BURKE TAPPING MACHINE

**with
Exceptional
Power**



The new No. 606 Burke Tapping Machine belies its size in its remarkable power and speed. Handling $\frac{5}{8}$ " taps in cast-iron or $\frac{1}{16}$ " taps in steel, it is unusually useful. Compactly built, it is portable and can be placed in any convenient place.

*Write for
circulars
and prices.*

The Burke Machine Tool Co., 297 E. 16th St.,
Conneaut, Ohio

T. H. L. FRONT LEVER BENCH PUNCH

Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work. Weight 70 lbs.

PRICE \$40

Extra Punches, 20 cents each; extra dies, 30 cents.

Capacity $\frac{1}{2}$ " holes through $\frac{3}{16}$ " steel; $\frac{13}{32}$ " through $\frac{1}{4}$ " steel. Can also be made for up to $\frac{3}{8}$ " holes through thinner metal. Punches and dies in stock from $\frac{1}{8}$ " to $\frac{1}{2}$ ".

Immediate shipment from stock

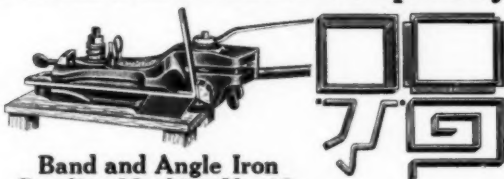
**T. H. LEWTHWAITE
MACHINE CO.**

(Est. 1890)

311 E. 47th St., NEW YORK



Production Machines Our Specialty



**Band and Angle Iron
Bending Machine No. 13**

**Manufacturers of
Automatic Grinding and Polishing Machines,
Punch Presses, Shearing and Bending Machines.**

Send for illustrated circulars and prices.

Excelsior Tool and Machine Co.
East St. Louis, Illinois

Blower, Sprayer, Suction-cleaner

Instantly Convertible ~ No Installation



**10
days
Free
Trial**

This portable electric blower delivers DRY air, free from oil, at high velocity, yet low pressure. It safely, quickly, and efficiently cleans motors, generators, converters, shafting, overhead piping, etc. Reduces fire risk and danger of "shorts" and "burnouts."

Instantly convertible for suction-cleaning stocks, bins, auto interiors, furniture, overhead pipes, shafts, line shafting, etc., or for spraying insecticides, deodorants, paints, lacquers, etc.

Attach to any light socket. Any voltage. Less than 2¢ an hour to run. Ball bearings—no oiling. 4 models. Used by over 20,000 concerns. Fully guaranteed by 20 year old company, originators and largest manufacturers of portable electric blowers.

Try this blower 10 days. Then pay for it or return it at our expense.

WRITE NOW

For prices and descriptive folder
No. 62-B.

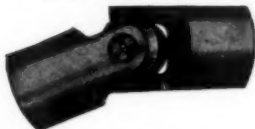
CLEMENTS MFG. CO., 62-B Clements Bldg.
6650 So. Narragansett Ave., Chicago, Ill.

Ball-bearing
Clements
Cadillac

STANDARDIZATION PAYS

Universal Joints

Steel and Bronze



*Send for Circular giving specifications
and prices on complete line*

Boston Gear Works Sales Co.

North Quincy, Mass.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

BOSTON GEARS



Townsend Centrifugal Multi-Blow Riveters

THE ONLY MACHINE THAT
IMITATES HAND RIVETING IN
EVERY WAY.

NUMEROUS TYPES FOR ALL
KINDS OF WORK.

Round and Flat heads, hollow and cheek rivets
from .008" to $\frac{5}{16}$ " without distortion or breaking
of fragile material. In places inaccessible by any
other method.

H. P. Townsend Mfg. Co.
Hartford, Conn.

Foreign Representatives:

G. H. Alexander Machinery Ltd., Birmingham, England
Andrews & George Co., Tokyo, Japan
Fenwick Freres, Paris, France

Wood-Working Machinery

For a comprehensive display of new, up-to-date
wood-working machinery and allied equipment,
as well as lists of used machinery, consult

Wood-Working Machinery

It's a publication similar to this, but devoted to
the advertising of wood-working machines, in-
cluding saw mill equipment. A copy will be
sent you free on application.

Hitchcock Publishing Co.,

508 So. Dearborn St.,

Chicago, Ill.

"ALNOR" Pyrometers

for the
Hardening
Furnace

MODEL 223

Inexpensive, yet accurate and durable, the ALNOR Pyrometer is used by large and small shops everywhere for heat-treating work. Because of its low first cost and compact size it is also very popular for soft metal melting, galvanizing, die casting, japanning, enameling, measuring flue gas temperatures and many other purposes.



\$35

As
Illustrated

Write for descriptive folder

Illinois Testing Laboratories, Inc.
150 W. Austin Ave., Chicago, Ill.

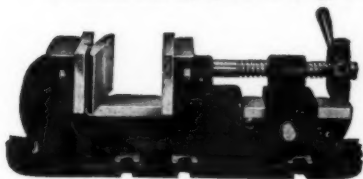
MARKING DEVICES



THE SCHWERDTLE STAMP CO.
BRIDGEPORT, CONN.

Gem Drill Press Vise

With Automatic, Quick-Acting, Powerful Grip



*Holds
Irregular
Pieces
Firmly*

The jaws are made of steel, hardened and ground, with horizontal and vertical "V" grooves. The independent swivel jaw holds taper and irregular work with a bull-dog grip. Its quick action, powerful grip and adaptability make it *the most efficient vise on the market*. Made in three sizes. Write today for folder, picturing its use in drilling and milling operations.

J. E. Martin Tool & Die Works, 528 W. State St.
Springfield, O.

"Champion" Emery Wheel Dresser

Outlasts a Dozen Cheaper Dressers

The "Champion" is made by experts, for long life and the best service. The only dresser that runs in an oil bearing.



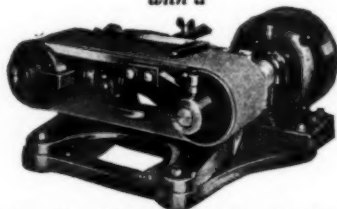
The most economical dresser you can buy. Cutters are made of the best grade of tool steel, milled and heat-treated and tempered—fully guaranteed. Get the complete details on this cost saving tool.

Write for Catalog also describing *Champion Tool Holders, Expanding Mandrels, Vises, Clamps, Shop Furniture, Etc.*

The Western Tool & Mfg. Co.
SPRINGFIELD, OHIO

Abolish Expensive Hand Finishing

with a



Simplex-M Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

WALLS SALES CORP., 96 Warren Street
NEW YORK



“Utility Tools”

Cut Replacement Costs

This Interchangeable Counterbore and Spot Facer is equipped to serve you better, longer and with greater economy—because of

Four Points of Superiority

- (1) Pilots cannot break or twist off.
- (2) Cutters cannot break and are easily removed.
- (3) Set screws cannot loosen.
- (4) The drive is the utmost in simplicity and power.

*If you are interested in tool economy,
send for catalog; it will pay you*

The J. C. Glenzer Company

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To Industrial Plants

For the mutual benefit of yourselves and our advertisers, we want to be sure that the Blue Book goes, without cost, to those in your plant who can use it to good advantage.

Quite a number of you, particularly among automobile manufacturers, have sent us lists of the prominent men in your organizations who are most closely identified with the planning of your improvements and the selection or purchase of your machinery.

If you have not done this, you are earnestly requested to send us such a list of names, so that we may mail the Blue Book regularly every month to those of your own selection, without cost or obligation of any kind whatsoever. Simply tear out this page, write the names on the reverse side, and mail it to the publisher.

Our only object is to make the Blue Book the best buying and selling medium on earth between manufacturers of machine tools and shop equipment and plants such as yours.

(See next page)

HITCHCOCK PUBLISHING CO.

508 S. Dearborn St., Chicago, Ill.

Please send your Machine Tool Blue Book, without cost, to the following members of our organization, who have to do with planning the equipment of our machine shops and the selection or purchase of our machine tools and other shop requirements:

(Give both names and titles)

1. 项目背景与意义
 随着全球经济的快速发展和人口老龄化的加剧，养老问题已成为社会关注的焦点。传统的家庭养老模式已难以满足日益增长的需求，政府和社会各界正积极探索多元化的养老模式。本项目旨在通过引入社会资本，创新养老服务体系，提升老年人的生活质量，具有重要的社会意义和经济效益。

2. 项目目标与范围
 本项目的主要目标是构建一个集养老、医疗、康复、娱乐于一体的综合性养老服务体系。项目范围涵盖项目区内的养老服务设施建设、运营及管理。

3. 项目组织架构
 项目组织架构如下：

- 项目领导小组：负责项目的整体规划、决策和监督。
- 项目实施单位：负责项目的具体实施和运营。
- 合作单位：包括医疗机构、康复中心、社区组织等。

4. 项目实施方案
 项目实施方案包括以下几个方面：

- 基础设施建设：建设养老公寓、康复中心、日间照料中心等。
- 服务体系建设：建立完善的养老服务体系，包括生活照料、医疗护理、康复训练、文化娱乐等。
- 运营管理：建立健全的运营管理制度，确保项目的高效运行。
- 资金筹措：通过政府补贴、社会资本引入等方式筹措项目资金。

5. 项目预期效益
 项目预期效益包括社会效益和经济效益。社会效益方面，项目将有效缓解养老压力，提升老年人的生活质量；经济效益方面，项目将带动相关产业发展，创造就业机会。

6. 项目风险评估与应对措施
 项目风险评估包括政策风险、市场风险、运营风险等。应对措施包括加强与政府沟通、做好市场调研、完善运营机制等。

7. 项目结论
 本项目符合国家政策导向，市场前景广阔，具有较高的社会效益和经济效益。项目实施后将显著提升养老服务水平，为老年人提供更好的生活保障。

It is understood that you are to use the above names as a mailing list for your Machine Tool Blue Book only, and that they will not be used for any other purpose.

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Make the job of Hand Trucking Safe against Truck kick back—no more heels torn from shoes, feet pinched or worse.

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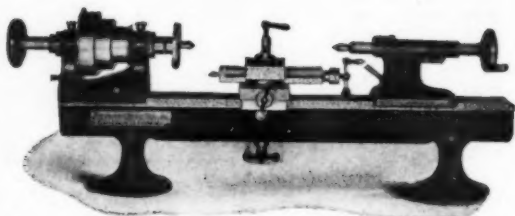
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*"The Safety Truck
Brake pays for itself
every week."*

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Bench Lathe Engineers

The economy of these lathes is in the small investment, to perform work, within their size, to better advantage than on larger and more expensive machines. In fact, for some classes of work there is no substitute for the fine accuracy and convenient operation obtained on Wade Bench Lathes.

Let us know your problems

THE WADE TOOL CO., Waltham, Mass.



The Blue Book

**Goes straight to the Heart of 96% of the
Best Plants in every State of the U. S. A.**

The above statement is the result of careful mail inquiries directed to thousands of the larger tool-using concerns.

It is also mailed every month to the leading importers of American machinery and equipment in foreign countries.

In Spite of Precautions Taps Break in the Hole



That's bad enough—but the real expense comes in stripping the threads when you remove the broken tap.

The Walton Tap Extractor

offers an effective, instantaneous way of overcoming this loss. Its steel fingers inserted in the broken tap remove it intact. An apprentice can operate it!

Made in three and four-flute styles

Often pays for itself in the 60 day trial allowed

The Walton Company
302 Pearl St., Hartford, Conn.

"PRO-CUN-IER" TAPPING ATTACHMENTS

Style
"E"
High
Speed
Tapper



For only a few dollars, a "PROCUNIER" reversible tapping head converts your drill press into a sensitive tapping machine. Our brand new cork clutch reversible friction tapper (illustrated), can be driven over 2000 R. P. M. on many jobs.

1/4" Capacity \$35.00: 1/2" Capacity \$45.00

We also have positive drive tools for slower work, at much lower prices.

Here's all the "Pro" steel dog clutch tappers cost complete with our new style tap holder:

No. 1—1/4"	Capacity; Safety	\$28.00; Positive	\$22.00
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No. 3—3/4"	Capacity; Safety	\$40.00; Positive	\$34.00
No. 4—1"	Capacity; Safety	\$52.00; Positive	\$46.00

Want to try one on your tapping job?

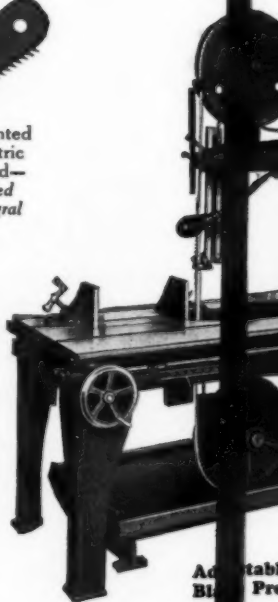
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14 S. Clinton St., Chicago, Ill.

"No tool room is complete without"



Marvel Hack Saw Blades

MARVEL High Speed Edge Hack Saw Blades are guaranteed not to break in two in any machine—not even by accident. Marvel blades with the genuine high speed steel cutting edge electrically welded to a tough special alloy back outlast ordinary blades from six to ten times, and with faster, cleaner cuts, and fewer blade changes.



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Send for Description

ARMSTRONG - BLUM

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Without a MARVEL Metal Band Saw"

MARVEL HOLE SAW



26 Sizes— $\frac{3}{4}$ " to $4\frac{1}{8}$ "

Cut clean, round holes through steel, wood, cast iron, brass, copper, bakelite, slate, marble, etc., to a depth of $1\frac{1}{4}$ in. The teeth are HIGH SPEED STEEL, welded to a tough, special alloy UNBREAKABLE BODY. They stand up in use in portable electric drills and drill presses. YOU WILL WANT THE BEST. Write us for details, price, etc.

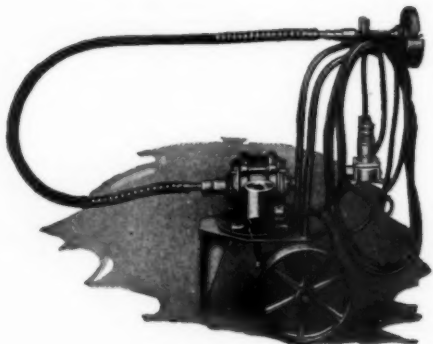
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Pressure in Pounds

Descriptive Circulars

MANUFACTURING CO.
CHICAGO, ILLINOIS

A Portable GRINDER

**which will withstand continuous
HARD GRINDING DUTY!**



1 H.P., 3 Phase, 220 or 440 volts. 3600 R.P.M. at 60 cycle. 40° C. Rise Constant Duty. Nine motor leads are brought out in switch box for ready connection to either 220 or 440 volts. Strong Flexible Shaft. Light Metallic Handle equipped with Standard Ball Bearings. Equipped with 8"x1" grinding wheel. Diameter of spindle at wheel, $\frac{1}{4}$ ". Net weight of Grinder, 155 lbs. Shipping weight, 200 lbs. Can be furnished in single phase 110 or 220 volts A.C. and 110 or 220 volts D.C.

A Sales Representation Is Open in a Few Localities

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MANUFACTURERS

WHITTIER, CALIFORNIA

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No. 10

This machine has been designed to meet the popular demand for those wanting a general purpose grinder. One end is arranged for surface grinding and the other end for tool or plain grinding.

Special Features

Base: Box type construction, with liberal bearing space for knee, insuring accuracy.

Knee: Supported by elevating screw having ball thrust bearing. Hand wheel graduated in thousandths, long bearing on column.

Spindle: Made of High Carbon Steel, heat treated, runs in 4 Timken tapered roller bearings, adjustment collars to each bearing. Bronze bearings furnished, if desired.

Countershaft: Ball bearing with tight and loose pulley and belt shifting device.

Lubrication: Alemite system for spindle and countershaft.

Write for Complete Specifications and Prices

Illinois Machine & Mfg. Co.
LaSalle, Illinois



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*There are four cardinal points
to profitable advertising:*

1. The article advertised must have real merit.
2. The copy describing it should be clear and concise.
3. The advertising message should be delivered to the maximum number of responsible buyers.
4. The cost should be in fair proportion to the distribution of the medium used, quality of circulation considered.

The controlled circulation of *Hitchcock's Machine Tool Blue Book* will deliver your message to more responsible users and buyers of machine tools and allied equipment, including aircraft, automotive and other large manufacturing plants, railway mechanical officials, etc., in the United States, than any other publication on earth. It is also sent to the more important importers in all parts of the world.

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Atlas Press Co., Kalamazoo, Mich.
Sheldon Machine Co., Railway Exchange Bldg., Chicago, Ill.
Wilson, K. H., Buffalo, N. Y.

Balancing Ways

Sundstrand Machine Tool Co., Rockford, Ill.

Ball Bearings

Boston Gear Works Sales Co., Norfolk Downs, Mass.

Band Saw Machines, for Metal

Armstrong-Bloom Mfg. Co., 341 N. Francisco Ave., Chicago

Bending Machines, Hand and Power

Armstrong-Bloom Mfg. Co., 341 N. Francisco Ave., Chicago
Excelsior Tool & Mch. Co., E. St. Louis, Ill.
Leathwaite Mchs. Co., T. H. 311 E. 47th., N. Y.

Blowers, Electric

Clements Mfg. Co., 6860 Naragansett Ave., Chicago, Ill.

Bolt and Nut Machinery

Foots-Burt Co., Cleveland, O.

Boring, Drilling & Milling Machines

Defiance Machine Co., Defiance, O.

Boring Machines, Horizontal

Avey Drilling Machine Co., Cincinnati

Brakes, Hand Truck

Fisher Equip't., 1291 Canton Bldg., Chicago

Brands, Burning

Schwerdtle Stamp Co., Bridgeport, Conn.

Cap Screws, Hexagon Head

Eleo Tool & Screw Corp., Rockford, Ill.

Centering Machines

Sundstrand Machine Tool Co., Rockford, Ill.

Centers, Frictionless Live

Precision Gauge & Tool Co., Detroit, Mich.

Centers, Special

Precision Gauge & Tool Co., Detroit, Mich.

Chain Drives

Boston Gear Works Sales Co., Norfolk Downs, Mass.
Culman Wheel Co., 1369 Altgeld St., Chgo.

Chains, Silent and Roller

Culman Wheel Co., 1369 Altgeld St., Chgo.

Chamfering Machines, Automatic

Grant Mfg. & Mchs. Co., Bridgeport, Conn.

Chucks, Automatic

Procutner Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Collet

Procutner Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Drill and Tap

Procutner Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Quick Change

Glenzer Co., J. G., Detroit, Mich.
Procutner Safety Chuck Co., 14 So. Clinton St., Chicago

Chucks, Ring Wheel Grinder

Graham Manufacturing Co., Providence, R. I.

Clutches, Friction

Conway Clutch Co., Cincinnati, O.

Cold Saws

Burke Machine Tool Co., Cuyahoga, Ohio

Collets

Wade Tool Co., Waltham, Mass.

Contract Work Wanted

Burke Machine Tool Co., Cuyahoga, O.

Counterbores and Spot Facers

Glenzer Co., J. G., Detroit, Mich.

Couplings, Friction Clutch

Conway Clutch Co., Cincinnati, O.

Demagnetizers

Luma Electric Equipment Co., Toledo, Ohio

Discs, Blank and Forming

American Tool Works, Inc., Hartford, Conn.
Eleo Tool & Screw Corp., Rockford, Ill.
Wade Tool Co., Waltham, Mass.

Classified Finding Index

Die Sets

Baumbach Mfg. Co., E. A., 1812 So. Kih-
bourne Ave., Chicago

Die Threaders, Automatic

Townsend Mfg. Co., H. P., Hartford, Conn.

Drill Fixtures

Stewak Tool Co., Detroit, Mich.

Drill Jigs

Stewak Tool Co., Detroit, Mich.

Drill Heads, Multiple

Stewak Tool Co., Detroit, Mich.

Drilling Attachments, High Speed

Graham Manufacturing Co., Providence, R. I.

Drilling Machines, Automatic

Townsend Mfg. Co., H. P., Hartford, Conn.

Drilling Machines, Bench

Avey Drilling Machine Co., Cincinnati

Drilling Machines, Multiple Spindle

Avey Drilling Machine Co., Cincinnati
Foots-Burt Co., Cleveland, O.

Drilling Machines, Portable Electric

Strand Co., N. A., 5001 N. Lincoln St., Chicago

Drilling Machines, Sensitive

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Burke Machine Tool Co., Cincinnati, Oh
Foots-Burt Co., Cleveland, O.

Drilling Machines, Vertical

Avey Drilling Machine Co., Cincinnati
Foots-Burt Co., Cleveland, O.

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Cleveland Twist Drill Co., Cleveland, Ohio.

Drive Screws

Elio Tool & Screw Corp., Rockford, Ill.

Drives, Lathe

Cullman Wheel Co., 1356 Altgeld Street,
Chicago, Ill.

Electric Blowers

Clements Mfg. Co., 6650 Noragansett Ave.,
Chicago, Ill.

Electrical Instruments

Illinois Testing Laboratories, Inc., 155 W.
Austin Ave., Chicago

Emery Wheel Dressers and Cutters

Western Tool & Mfg. Co., Springfield, O.

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Schwardtke Stamp Co., Bridgeport, Conn.

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Luna Electric Equipment Co., Toledo, Ohio

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Wardwell Mfg. Co., Cleveland, O.

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Western Tool & Mfg. Co., Springfield, O.

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Beaton Gear Works Sales Company, Norfolk
Dorset, Mass.

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Wells Sales Corp., 95 Warren St., New York

Grinding Machines, Cutter, Reamer and Tool

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Grinding Machines, Cylindrical

Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die

Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Internal

Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Portable Electric

Strand Co., N. A., 5001 N. Lincoln St., Chicago

Grinding Machines, Pulley Finishing

Graham Manufacturing Co., Providence, R. I.

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Grinding Machines, Ring Wheel

Graham Manufacturing Co., Providence, R. I.

Grinding Machines, Surface

Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Universal

Thompson Grinder Co., Springfield, Ohio

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Hack Saw Machines

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Graham Manufacturing Co., Providence, R. I.

Lag Screws

Elico Tool & Screw Corp., Rockford,

Lathe Drives

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Townsend Mfg. Co., H. P., Hartford, Conn.

Lathes, Manufacturing

Sundstrand Machine Tool Co., Rockford, Ill.

Lathes, Precision

Wade Tool Co., Waltham, Mass.

Mandrels, Expanding

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Elico Tool & Screw Corp., Rockford, Ill.

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Kearney & Trecker Corp., Milwaukee, Wis.

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Burke Machine Tool Co., Connecticut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand

Burke Machine Tool Co., Connecticut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Manufacturing

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Milling Machines, Universal

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Milling Machines, Vertical

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Oil, Lubricating

Sun Oil Co., Philadelphia, Pa.

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Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.
Sheldon Machine Co., Railway Exchange Bldg., Chicago, Ill.
Wilson, R. K., Buffalo, N. Y.

Presses, Punch

Leathwaite Mch. Co., T. H., 311 E. 47th., N. Y.

Reamer Machinery

Avery Drilling Machine Co., Cincinnati

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Punch, Shear and Bender, Hand

Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago

Punches, Hand

Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago
Lewthwaite Mch. Co., T. H., 311 E. 47th, New York
Whitney Metal Tool Co., Rockford, Ill.

Punches and Dies

Lewthwaite Mch. Co., T. H., 311 E. 47th, N. Y.

Punches and Shears

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Illinois Testing Laboratories, Inc., 180 W. Austin Ave., Chicago

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Cleveland Twist Drill Co., Cleveland, Ohio.

Riveters, Multiple Spindle

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Riveters, Pneumatic

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Riveting Machines

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Townsend Mfg. Co., H. P., Hartford, Conn.

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Lewthwaite Mch. Co., T. H., 311 E. 47th, N. Y.

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Saw Sharpening Machines

Wardwell Mfg. Co., Cleveland, O.

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Reynolds Machine Co., Massillon, Ohio

Screw Machines, Automatic

Automatic Machine and Engineering Co., Inc., Detroit, Mich.
Townsend Mfg. Co., H. P., Hartford, Conn.

Screws, Cap, Drive, Lag, Mch. & Wood

Elico Tool & Screw Corp., Rockford, Ill.

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Shaping Machines

Osborne & Sexton Machy. Co., Columbus, O.

Shears, Hand

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Lewthwaite Machine Co., T. H., 311 E. 47th St., New York
Whitney Metal Tool Co., Rockford, Ill.

Special Tools and Machinery

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Wade Tool Co., Waltham, Mass.

Speed Reducers, Worm, Spur and Herringbone

Boston Gear Works Sales Co., Norfolk, Mass.
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Spot Welding Machines, Speed.

Kaiser Electric Corporation, Newark, N. J.

Sprockets

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Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board

Schwerdtle Stamp Co., Bridgeport, Conn.

Straightening Machines

Whitney Metal Tool Co., Rockford, Ill.

Stud Setters

Procon Safety Chuck Co., 14 E. Clinton St., Chicago

Tap Extractors

Walton Co., Hartford, Conn.

Tap Holders

Procon Safety Chuck Co., 14 E. Clinton St., Chicago

Classified Finding Index

Tapping Machines and Attachments

Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Proconer Safety Chuck Co., 14 S. Clinton St., Chicago
Whitney Metal Tool Co., Rockford, Ill.

Threading Machines, Automatic, Stud
Grant Mfg. & Mch. Co., Bridgeport, Conn.

Threading Tools

Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago

Tool Holders

Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago
Western Tool & Mfg. Co., Springfield, O.

Tools, Boring

Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago

Tools, Lathes and Planer

Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago

Tools, Machinists'

Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago

Tube Flanging Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Universal Joints

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Boston Gear Works Sales Company, Norfolk Downs, Mass.

Used and Rebuilt Machinery

Automatic Machine & Engineering Co., Inc., Detroit, Mich.
Bennett Machinery Co., 30 Church St., New York, N. Y.
Besser Mfg. Co., J., Springfield, Ill.
Bernstein & Co., Geo. M., 221 N. Elizabeth St., Chicago, Ill.
Bowman Co., Geo. H., Cleveland, Ohio.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Cincinnati Mch. & Supply Co., Cincinnati, O.
Donahoe Steel Products Co., 74th and Ashland Ave., Chicago
Eastern Machinery Co., Cincinnati, O.
Elyria Belting & Mch. Co., Elyria, Ohio.
Easley Machinery Co., E. L., 651 Washington Blvd., Chicago
Foster Machinery Co., Cleveland, Ohio.
Gosse, James, J., Boston, Mass.
Hill, Clarke & Co., 648 W. Washington Blvd., Chicago
Hyman & Sons, Joseph, Philadelphia, Pa.
Indianapolis Machinery & Supply Co., Indianapolis, Ind.
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Iroquois Machinery Co., Buffalo, N. Y.
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, Ohio
Jones Machinery Co., Detroit, Mich.
McDonald Machinery Co., St. Louis
Merr-Gallbreath Mch. Co., Pittsburgh, Pa.
Midwest Equipment Co., 626 W. Lake St., Chicago, Ill.

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Miles Machinery Co., Saginaw, W. S., Mich.
Molitor Machinery Co., Chas., 118 S. Clinton St., Chicago
Nelson Machinery Co., Green Bay, Wis.
Norton-Broadway Mch. Co., Cincinnati, O.
O'Brien Machinery Co., Philadelphia
Osborne & Sexton Machy. Co., Columbus, O.
Reeve-Fritts Co., 558 W. Washington, Chgo.
Rellance Machinery Sales Co., Pittsburgh, Pa.
Riverside Machinery Co., Detroit, Mich.
Russell Machine Co., Pittsburgh, Pa.
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Seyfert's Sons, Inc., L. F., Philadelphia, Pa.
Strafer Machinery Co., Jersey City, N. J.
Strong, Carlisle & Hammond Co., Cleveland, Ohio
United Machinery & Supply Co., St. Louis, Mo.
Wertman Mch. Co., M. A., Cleveland, O.
West Penn Machinery Co., Pittsburgh, Pa.
White Machy. Co., A. D., 108 N. Jefferson St., Chicago
Wigglesworth Mch. Co., Cambridge, Mass.

Vices, Drilling Machine

Armstrong-Bum Mfg. Co., 841 N. Francisco Av., Chicago
Armstrong Bros. Tool Co., 808 N. Francisco Av., Chicago
Graham Manufacturing Co., Providence, R. I.
Martin Tool & Die Works, J. E., Springfield, O.
Pionket Mch. Co., J. E., 215 N. Ada, Chgo.
Sheldon Machine Co., Railway Exchange Building, Chicago, Ill.

Vices, Machinists'

Western Tool & Mfg. Co., Springfield, O.

Vices, Milling Machine

Graham Manufacturing Co., Providence, R. I.
Sheldon Machine Co., Railway Exchange Building, Chicago, Ill.

Vices, Shaper

Graham Manufacturing Co., Providence, R. I.
Sheldon Machine Co., Railway Exchange Building, Chicago, Ill.

Welding Machines, Electric Spot

Elster Electric Corporation, Newark, N. J.

Welding Machines, Resistance

Elster Electric Corporation, Newark, N. J.

Wheel Dressers, Abrasive

Industrial Diamond Co., Detroit, Mich.

Wood Screws

Elco Tool & Screw Corp., Rockford, Ill.

Norgren Sight Feed Automatic Air Line Lubricator



APPROVED!

Eight Leading Trade Journals Have Given The Norgren Lubricator Editorial Presentation.

More Than Fifty Nationally Known Manufacturers Are Using Norgren Lubricators As Standard Equipment Or Plant Equipment.

The **NORGREN** Sight Feed Automatic Air Line Lubricator provides a simple means of injecting lubricant into the air stream of pneumatically operated tools. Adjustable to any demand. Entirely automatic. No working parts.

Ten days **FREE TRIAL** to any firm having satisfactory rating.

Norgren Industrial Hose Couplings For Air, Water, Grease



SIMPLE-NEAT-EFFECTIVE

Positively will stand the bursting pressure of the hose. Concentric grip and seal prevents injury to the hose and protects hose end from destructive action of grease, oil, water.

Can be removed and re-applied whenever necessary.

Used as original equipment by the following nationally known machine builders:

Landis Tool Co., Waynesboro, Pa.
Bryant Chucking Grinder Co., Springfield, Vt.
Norton Company, Worcester, Mass.
Excello Aircraft & Tool Co., Detroit, Mich.

Manufactured by

CARL A. NORGREN CO., - Denver, Colorado
Eastern Distributor—J. N. Fauver Co., 31 Brady St., Detroit, Mich.

Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted, or For Exchange, set in uniform style, will be published in the Classified Section at the rate of 60 cents a line across the page, each issue, plus \$3.00 for name and address. Minimum charge, \$6.00. No display permitted.

Write directly to those offering the machines for sale, for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants in either new or used machinery and the publisher will pass them along to the advertisers.

FOR SALE BY

Geo. M. Bernstein & Co., - 221 No. Elizabeth St., Chicago, Ill.
 Drill, 4 sp. Fox, No. 1 M. T...\$ 35. | Hammer, No. 2 Grant, m. d., $\frac{3}{4}$ " 99-
 Gear hobber, No. 2 B-C. 250. | Lathe, tur., No. 5 Foster, 1 1/2/16" 200-
 Hack saw, 6x6 Peerless..... 65. | Press, 15 ton Lucas forcing..... 190.
 Brand new 4 jaw Independent Lathe Chucks—3"—\$3.50; 4"—\$4.50; 5"—\$6.00;
 6"—\$8.00. Send us your inquiries.

FOR SALE BY

Mid-West Machine Tool & Supply Co., Davenport, Iowa
 Automatics, Nos. 0 & 00 B. & S. | Hobbers, Nos. 3, 12-B & C.
 Gear generator, 3" Waltham bevel. | Lathe, No. 9 LeBlond multi-cut.
 Grinder, 10"x36" Norton. | Millers, Nos. 1 & 2 Brown & Sharpe.
 Grinder, No. 10 B. & S. ext. | Radials, 3" Cincinnati Bickford.
 Grinder, No. 22 Heald rotary surf. | Turret lathe, No. 6 Warner & S.
 Partial list; send us your inquiries.

FOR SALE BY

Brownell Machinery Co., - 150 Pine St., Providence, R. I.
 Boring mill, No. 32 Lucas horizontal, motor drive.
 Drill, 3-spindle Leland Gifford h. s. b. b., power feed.
 Gear cutter, No. 13 Brown & Sharpe.
 Lathe, 36" Bullard New Era vertical turret.
 Miller, No. 3 Cincinnati h. p. vertical, m. d.
 Shaper, 20" Cincinnati 8-speed gear-box, m. d.

FOR SALE BY

Wigglesworth Machinery Company

199 Bent Street, - - - - - **Cambridge, Mass.**
 Automatics, No. 00 B. & S...\$250.00 | Miller, No. 2 LeB. hvy. univ., m. d.
 Boring mill, No. 0 G. & L. | Miller, 48"x24"x10' Ingersoll.
 Lathe, 18"-20"x20" L. & S. | Planer, 30"x30"x8' Clev. openside.
 Lathe, 19"-30"x8' LeBlond, gap. | Press, No. 95F Toledo, 103 bet.hous.
 Miller, 6"x18" P. & W. thread. | Press, No. 3A Bliss.

FOR SALE BY

L. F. Seyfert's Sons, Inc., (Monarch Machinery Co. Div.)
437-39 North Third Street, - - - - - **Philadelphia, Pa.**
 Milling machines, No. 0 Rockford; No. 2M Cincinnati.
 Surface grinder, No. 2 Brown & Sharpe.
 Screw machines, No. 3 Foster; No. 3AGH Foster; Nos. 3 & 4 W. & S.
 Shapers, 16" Ohio; 20" Ohio; 20" G. & E.; 24" Cincinnati.
 Planers, 24"x24"x6' to 48"x48"x20'; belt and motor drives.

USED AND REBUILT MACHINERY

FOR SALE BY

Miles Machinery Co.,

Saginaw, W. S., Mich.

PRESSES

1000 ton Bliss embossing.
No. 59 Toledo tie rod.
No. 67 Consolidated tie rod.

No. 165 Toledo toggle.
No. 6 Adriatic o. b. l.
No. 5 Toledo o. b. l.

COMPRESSORS

21", 4 1/2" x 14 1/2" Gardner.
40", 6" x 6" Gardner.
92", 7" x 6" Ingersoll Rand.

140" 8" x 6" Gardner Duplex.
446" 14" x 9" x 12" Ingersoll Rand
590", 14" x 14" x 15" Union steam.

LATHES

12" x 6' Hendey.
14" x 6' LeBlond.
15" x 10' Carroll-Jameson.

18" x 8' Lodge & Shipley.
20" x 8' Cisco geared head.
24" x 12' Milwaukee.

MILLERS

Nos. 1 1/2, 2 B & 3 B Milwaukee.
Nos. 2, 3 & 4 Cincinnati.
Nos. 1 1/2, 2 B, & 3 Brown & Sharpe.

Nos. 1 1/2, 2 & 2 1/2 Rockford.
No. 2 & 4 Cincinnati vertical.
No. 6 Becker vertical.

PLANERS

30" x 30" x 8' Cleveland openside.
36" x 36" x 8' G. A. Gray.
36" x 36" x 12' Cincinnati.

42" x 40" x 10' New Haven.
48" x 48" x 10' Liberty.
72" x 60" x 14' Cleveland openside.

FOR SALE BY

Scott-Bansbach Machinery Co., 4607 West 20th St., Chicago, Ill.

Automatic screw machines, B. & S., No. 60, 0 and 2G.....	\$250. to \$400.
Automatic screw machine, Gridley 4 spindle 1 1/2" 1 1/2" 1 1/2" 1 1/2" 300. to 400.	
Automatic screw machine, 3 1/2" Cleveland Model A, No. 27182.....	300.
Drill, 24" Sibley sliding head, b. g. and p. f.....	200.
Drill, 2-spindle H. W., h. s., b. b. heavy duty, class B.....	200.
Gear hobber, S. & S. No. 0, capacity 12" x 10" x 1/2" d. p.....	250.
Gear cutter, B. & S. No. 3, 26" for spur gears.....	200.
Grinder, No. 2 Brown & Sharpe automatic surface, magnetic chuck.....	350.
Grinder, Capitol internal, capacity 3/16" to 2" x 2".....	100.
Lathe, 18" x 6' Hendey quick change, taper attachment, serial No. 19189.....	450.
Lathe, 18" x 9' Chard semi-quick change gear.....	275.
Lathe, 20" x 8' Monarch, d. b. g., q. c. chucks.....	300.
Lathe, 30" x 13' H. S. & G. heavy duty, q. c., d. b. g. 16,000 lbs.....	1,000.
Miller, No. 3 Kemp Smith, cone drive, with c/s and vise.....	500.
Miller, No. 1 Garvin universal, fully equipped.....	350.
Miller, Cleveland universal, No. 1 g. h., fully equipped.....	600.
Miller, No. 2 MU. Garvin universal, fully equipped.....	450.
Miller, 12" Cincinnati, mfg. type, s. p. d., vise and pump.....	250.
Miller, Briggs, G. & E. manufacturing, 16".....	75.
Miller, No. 5 Becker vertical, no rotary.....	300.
Miller, No. 7 Becker, Lincoln type.....	75.
Miller, Ingersoll slab, 42" x 36" x 9'.....	750.
Planer, 24x24x8 Fitchburg, 1 head.....	150.
Planer, 36" x 36" x 12' Cincinnati with 2 heads.....	800.
Press, No. 1, Consolidated o. b. i. 1 1/2" stroke, 700 lbs.....	80.
Press, No. 30A Perkins o. b. i., 2" stroke, 1500 lbs.....	125.
Press, No. 3 American (R & K) o. b. i., 2 1/2" stroke 2000 lbs.....	150.
Press, No. 3, L. & J. o. b. i., 2 1/2" stroke, 2000 lbs.....	200.
Press, No. 4 Niagara o. b. i., 2" stroke, 1700 lbs.....	175.
Press, No. 5 Niagara o. b. i., 2 1/2" stroke, 2900 lbs.....	250.
Saw, No. 5 Marvel high speed 6" x 6".....	100.
Screw machine, No. 1, B. & O. plain head, 13/16" capacity.....	175.
Separator, Curtis oil, 1 bushel.....	200.
Separator, oil, American 1 1/2 bushel.....	225.
Shaper, 20" Cincinnati, crank, back geared, vise and c/s.....	400.
Turret lathe, 24x10" Milholland, for chuck and bar work.....	475.
Turret lathe, 34" x 36" Acme with chucking equipment.....	300.
Turret lathe, 24" Steinle, 4" hole, side carriage.....	200.

USED AND REBUILT MACHINERY

FOR SALE BY

West Penn Machinery Company

1208 House Building,

Pittsburgh, Pa.

Automatic, No. 0 Brown & S. b. d.
Auto. "G" Gridley, $\frac{1}{2}$ " & $1\frac{1}{2}$ ", m. d.
Air compressors, 30 to 2500 cu. ft.
Bender, pipe, No. 6-C Wallace, m. d.
Blower, Spencer turbine, 1800 c. f.
Bolt cutter, 1" Landis, 3 hds., m. d.
Bolt cutter, $1\frac{1}{2}$ " Landis, dbl. head.
Bolt cutter, $2\frac{1}{2}$ " Acme, sgl. hd. m. d.
Bor. mill, 48" Bullard Maxi. 2 hds.
Boring mill, 72" Pond, 2 hds., b. d.
Boring mill, 96" Pond, 2 hds. m. d.
Boring mill, 16'-24" Niles, 2 hds. b. d.
Boring mill, floor type, 4' Bement.
Brake, 5" press type, 10 gauge.
Brake, 6" D. & K. 10 ga. box & pan.
Brake, 8" D. & K. 10 ga. box & pan.
Brake, 10" Dreis & K. $\frac{1}{2}$ " m. d.
Bulldozers, Nos. 2, 4, 6, 28, 29 & 30.
Cranes, Electric Traveling.
Die threader, Smalley General, dies.
Dieing mches., 25 & 50 ton H. & W.
Die sinker, No. E-3 Keller, m. d.
Drill, 21" Rockford, tap. att. m. d.
Drill, radial, 24" Fosdick, t. a., b. d.
Drill, radial, 34" Cin.-Bickford, s.p.d.
Drill, radial, 4' Prentice, t. a., b. d.
Drill, radial, 6" Dreses, s. p. d.
Flanger, McCabe, $\frac{1}{2}$ " capacity, dies.
Gear cutters, 11", 24" & 36" Gleason.
Gear cutter, spur, 36"x10" Newark.
Gear hobber, No. 4 Sch. & Sch. 118".
Gear planer, 20-ft. Gleason, m. d.
Grinder, centerless, No. 2 Cincinnati.
Grinder, centerless, No. 4-C Detroit.
Grinder, internal, No. 70 Heald.
Grinder, rad., 14" M. & D., m. d.
Grinder, surface, No. 16 Blanchard.
Grinder, surface, 14" Arter.
Grinder, surface, No. 2 Reid, b. d.
Grinder, tool & cut., No. 2 Walker.
Hammer, Blacker, power, 35-lbs.
Hammer, 80-lb. Bradley, cush. helve.
Hammer, 200-lb. Bradley, cush. helve.
Hammer, 200-lb. Bradley, compact.
Hammers, Nos. 3-B, 4-B, 4-N Hazel.
Hammers, steam, 600 lb. to 6000 lbs.
Header, No. 2 Wat. Far., o. d., tr. st.
Jacks, 35-ton Barrett, ball bearing.
Keyseater, No. 0 & 3 Baker.
Lathe, 16"x6" LeBlond, q. c. g., d. b. g.
Lathe, 20"x8" Hendey, tie bar, t. a.
Lathe, 24"x16" Bridgeford, g. hd. m. d.
Lathe, 48"x28" Bridgeford, g. hd. m. d.
Lathe, turret, No. 6 Warner & S.
Lathe, turret, 18" Libby, m. d.
Lathe, turret, 24" Steinle, $\frac{1}{2}$ " hole.
Lathe, tur., 26" Gisholt, 9" hole, m. d.
Lysolm tables, 72"x30".
Miller, plain, No. 2-A Milwaukee.
Miller, thread, No. 5 Lees Bradner.
Miller, universal, No. 3 Brown & S.
Miller, vertical, No. 2 Cincinnati.

Nut taper, 6-spindle Acme, 2".
Pipe machine, 3" Landis.
Pipe mchs., 8" Oster, 8" Williams.
Planer, 30"x30"x10' Woodward & P.
Planer, 48"x48"x18" Cinti., belt drive.
Planer, o. s., 36"x36"x16" D. & H.
Planer, o. s., 48"x48"x16" D. & H. m. d.
Planer, rotary, 48" Niles, m. d.
Presses, arbor, No. 17 Greenerd.
Press, o. b. i. Ferracute C1, 3" stroke.
Press, o. b. i. CG-6 Ferracute, 12000 lbs.
Press, hydraulic, 1,000 ton United.
Press, hyd. 100-ton Watson-Stillman.
Press, s. s., 13"x19 $\frac{1}{2}$ ", 2" stroke.
Press, No. 784 Bliss, t. r. 10" str.
Press, No. 82 B Toledo, d. c. 24" str.
Press, No. 96-A Toledo, d. c. 5" str.
Press, screw, No. 87 Niagara.
Press, wheel, 150-ton Schaffer.
Punch, beam, No. 5 Hilles & Jones.
Punch, hor., Cleveland, 1" thru 1".
Punch, hand, Shatz, bar and angle.
Punch & sh. No. 6 L. & A. $\frac{1}{2}$ " thru $\frac{1}{2}$ ".
Punch & s., Rock. R. $\frac{1}{2}$ " $\frac{1}{2}$ ", 36" thr.
Punch & s., Cleveland "C" 48" thr.
Punch, multiple, No. 5 H. & J. 10".
Riveters, air, hammer, spinning.
Rolls, bending 7"x8" Cleveland.
Rolls, bending, 12"x1" H. & J. d. e.
Roller, thread, Nos. 40 & 50 W. - F.
Sand blast, Pangborn, 90", ER-1.
Saw, band, metal No. 2 Klem, m. d.
Saw, cold, 48" Newton, m. d.
Saw, friction, Nos. 2 & 3 Ryerson.
Saw, hack, No. 5 Marvel, b. d.
Screw mch., No. 2 B. & S. wire feed.
Shapers, 16", 20", 24" & 36" G. & E.
Shear, angle, 6"x6"x1" H. & J.
Shears, alligator, $1\frac{1}{2}$ ", 2", 3" & 4".
Shear, bevel, Lennox $\frac{1}{2}$ ".
Shear, circle, No. 208-A Niagara.
Shear, No. 1 Gray, 3/16", 34" gap.
Shear, gang splitter, No. 235-A Bliss.
Shear, Cleveland "W" 3" capacity.
Shear, guil. No. 5 H. & J. 4" sq., m. d.
Shear, rotary, $\frac{1}{2}$ " Ryerson.
Shear, 36"x16" G. Pexto, foot.
Shear, squaring 8"x14 ga. Ohl.
Shear, sq. 10"x10 ga. Kutscheid, m. d.
Shear, 54" x $\frac{1}{2}$ " Garrison, 24" gap.
Shear, 12" x $\frac{1}{2}$ " Wheeling, 31" gap.
Slotter, 18" Dill, motor drive.
Straightener, 60" Nat. 14 ga. 17 rolls.
Straight'r, 48" United, 16 ga. 13 rolls.
Straightner, 18" round Abramson.
Straightener, 4" round Abramson.
Swaging mche., No. 5-A Standard.
Testing mche., Brinnell hardness.
Testing mches., 50,000 & 100,000-lb.
Tumbling barrel, 18"x36", b. d.
Upsetters, 1" to 6".
Welders, spot and butt.

USED AND REBUILT MACHINERY

FOR SALE BY

M. A. Wertman Machinery Co., 427 Penton Bldg., Cleveland, Ohio

Boring mill, King 40", 1 swivel and 1 turret head, swings 42", A1.
 Brake, Ohl 8"x10 ga., press type, near new condition.
 Cylinder borer, Moline 5-D, six spindles, very best condition.
 Drill, Allen No. 2, 4-spindle automatic feed, late machine, fine condition.
 Grinder, Landis 6"x18", self contained, (2).
 Grinder, 14"x72" Norton, m. d.
 Grinder, No. 1 Brown & Sharpe universal, full equipment.
 Pinion cutter, Sloan & Chace No. 1 Automatic, magazine fd., excellent cond.
 Sprue cutter, Coleman No. 5, 12" throat, capacity 1"x1½", near new.
 Turret lathe, No. 4 W. & S. universal, geared head.

FOR SALE BY

Chas. Melitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

MILLERS

No. 3B Brown & S., single pulley. No. 2 Hendey univ., single pulley.
 No. 2 Milwaukee, double arm, s. p. No. 2 Kempsmith, cone type.

SHAPERS

32" Columbia, single pulley. 16" Milwaukee, motor drive.
 34" Potter & Johnston, rotary table. 20" Gould & Eberhardt; 7" Rhodes.

PRESSES

3½ Bliss toggle draw, 12" stroke. No. 5 double action cam, roller feed,
 74" Cons. No. 64 Bliss, 6" stroke. power bench and foot power.

MISCELLANEOUS

Bench lathes. Grinders, No. 2 Norton; No. 11
 Bolt cutters, Landis. B. & S.; No. 60 Heald; No. 3½ E
 Drills, hi-speed, 1, 2, 3, 4 and 6. external and No. 3½ int. automatic
 Engraving machine, Deckel. Van Norman radials.
 Gear cutters, No. 13 Brown & S. spur. Keyseaters, 1" Baker.
 and bevel; Hardinge bench. Pipe mch., No. 4 Williams, m. d.
 Over 100 Lathes and Screw Machines; 2000 Collets, Brown & Sharpe. Etc.
 Chucks, Vises, Comp. Slide Rest, Sur. Plates, Die Hds., Gears, Mch. Parts Etc.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 Hadley Street,

St. Louis, Mo.

Bar shear, 5"x18".
 Boring mill, 36" Gisholt.
 Drill, 14" Mason high speed.
 Drill, 20" Champion.
 Drill, 22" Barnes, back geared.
 Drill, 24" Prentice, sliding head.
 Drill, 25" Barnes back geared.
 Drill, 28" Barnes sliding head.
 Drill, 1-spindle Avey.
 Drill, 2-spindle Leland-Gifford.
 Drill, 3-spindle Avey.
 Grinder, Wells Bros. universal.
 Grinder, 12"x60" Landis universal.
 Hammer, 60 lb. Bradley helve.
 Hammer, 600 lb. steam.
 Lathe, 18"x10' Bradford.
 Lathe, 20"x10' Bradford.
 Lathe, 24"x12' Lodge & Shipley.
 Lathe, 24"x12' Schumacher & Boye.
 Lathe, 30"x15' Lodge & S., q. c. g.
 Lathe, 36"x18' American, q. c. g.
 Miller, No. 1 U. S. hand.
 Miller, No. 2 LeBlond universal.

Miller, No. 2 Ohio single pulley dr.
 Miller, No. 3 Rockford hand.
 Miller, No. 5-B Brown & Sharpe.
 Pipe machine, 4" Oster.
 Pipe machine, 8" Williams.
 Press, No. 57 Swaine straight back.
 Press No. 1½ Bliss toggle.
 Press, No. 3 Toledo.
 Press, Stiles & Parker drawing.
 Press, No. 37 Niagara str. back.
 Press, No. 24 Toledo cam drawing.
 Press, No. 723 Toledo cam drawing.
 Punch, No. 14 W. W., 12" throat.
 Punch, double end, two 20" throats,
 capacity 1" in 1".
 Planer, 42"x42"x26" Wheeler, 2 hds.
 Screw machine, No. 3A Warner & S.
 Shaper, 16" Smith & Mills.
 Shaper, 32" Cincinnati.
 Shaper, 24" American-Klopp.
 Shear, 48" Excelsior, No. 16 gauge.
 Squaring shear, 8" power.
 Tapper, auto., Rickert & Schafer.

USED AND REBUILT MACHINERY FOR SALE BY

Marr-Galbreath Machinery Co.,

Air comp. 6, 15, 21, 45, 107, 129, 213 cu. ft.
Air comp., 1050 cu. ft. Syn. m. d.
Air receiver, 48"x10' for 150 lb.
Auto. lathes, 14" Fay, belt and m. d.
Barrel, 19"x24", tile lined, b. d.
Bender, hand, 3/16"x1" Wallace.
Bender & straight'r, cap. 12" beams.
Blower, No. 40 Connorsville.
Blowers, Root No. 4, 500 c. p. m.
Bolt cutter, 1" Geometric, m. d.
Bolt cutter, 1" Wells Bros., m. d.
Boring mill, 30" King; and Bullard.
Boring mill, 100" Pond, for m. d.
Boring mill, 14" Betts, 2 hds., m. d.
Brake, 6" D. & K., 16 ga. hand.
Brake 10' Keene toggle, 16 gauge.
Brake, power, 8"x10 ga. Chicago.
Brakes, hd, 10', for 18 ga. Robinson.
Broaching mch., No. 4 Oil Gear, m. d.
Broaching mch. Nos. 1 & 3 LaPointe
Chuck, Heald magnetic 14"x40".
Chuck, Walker magnetic, 6" diam.
Cold header, 3" W-F., solid die.
Cold saws, Nos. 114 and 12 Higley.
Crimping roll, 64" Robinson, 16 ga.
Drill, elect., 8" U. S., 110 v. Univ.
Drills, 14" T. & F., 2 and 3 spindle.
Drills, multiple 10 and 30 spindle.
Drill, 24" Rockford, g. f. taper att.
Drill, 25" Snyder, s. h., b. g.
Drill, radial, 5" Western, g. b., m. d.
Drill, radial, 3/4" C-B., g. b. for m. d.
Drill, sensitive radial, 3" Amer. t. a.
Exhauster, with 1 1/2 h. p. motor, 1/60.
Folders, bench 30" hand (4).
Forging mchs., 1 1/2", 3" & 3 1/2" (steel).
Furnace, rotary annealing, 12"x8".
Furnaces, oil tempering, 10"x10"x10".
Gear hobbers, No. 1 Adams "Farw".
Gear hobber 12" S-S "TRO".
Gear and pinion cutter, No. 3 Sloan.
Grinder, No. 12 Landis universal.
Grinder, No. 1 LaSalle surface.
Grinder, 18-D. Rowbottom, o. h. b. b.
Grinder, No. 1 Norton tool & cutter.
Groover, 30" Niagara, hand.
Hack saw, 6x8" Marvel, motordrive.
Hack saw, 12"x12" Racine.
Hack saw, Peerless, 6" univ. shaping
Hammer, 50 lb. Kane & Roach, pwr.
Ham., 400 lb. No. 10 Beaud., pwr. b. d.
Hammer, 500 lb. Erie stm. forg., s. f.
Hammer, 1000 lb. Chbg., steam drop.
Hoists, chain, 1 to 8-tons capacity.
Keyseaters, No. 2 Baker.
Keyway cutter, 24" Morton, cap. 2 1/2".
Lathe, Sundstrand 7" Mfg. type.
Lathe, 14"x8" Hendey, m. d., t. a.
Lathe, 14"x8" L. & S. q. c. g., t. a.
Lathe, 16"x8" Monarch, q. c. g.
Lathe, 16"x8" Hendey, tiebar, quick
change gear, taper attach.
Lathe, 14"x8" W.-B., q. c. g.
Lathe, 16"x11" Lehman, q. c. g., t. a.
Lathe, 18"x8" L. & S. sel. hd. m. d. t. a.

58 Water St., Pittsburgh, Pa.

Lathe, 18"x8" D. B. G., q. c. g. chuck.
Lathe, 18"x9" Hendy, q. c. g., t. a. col.
Lathe, 19"x10" LeBlond, q. c. g., t. a.
Lathe, 20"x12" Monarch, q. c. g., t. a.
Lathe, 22"x10" American, q. c. g., t. a.
Lathe, 22"x10" 10" Greaves-K., q. c. g.
Lathe, 24"x13" Lehman, g. h. q. c. g., t. a.
Lathe, 26"x15" G-K. for motor.
Lathe, 30x15" Lehman, gd. hd.
Lathe, 32"x16" Pgh., q. c. g., chuck.
Lathe, 32"x20" geared head, m. d.
Miller, No. 28 Ohio pl. auto. feeds.
Millers, pl. No. 3 B. & S., LeBlond.
Miller, universal No. 4 B. & S.
Miller, vert., Becker, Nos. 3 & 5-B.
Miller, auto. No. 2-M P. & J., s. p. d.
Motors, single and three phase.
Motor, 25 h. p. slip rg., 3/60/220/1160.
Pipe benders, 2" Chgo & Wallace.
Pipe mche., 10" EC & B., 6" Oster.
Planer, 30"x10" W. & P., 2-heads.
Press, 76-D Pexto, d. c., 10,000 lbs.
Press, No. 14 Toledo horn.
Presses, No. 3 Bliss, punch type.
Presses, o. b. i. No. 1 Toledo.
Press, No. 19, Bliss o. b. i.
Press, o. b. i. No. 3 Niagara, 1 1/2" str.
Presses, foot, No. 87 Bliss, pendulum.
Press, No. 6 Perkins, s. e., 4000 lbs.
Presses, No. 87 Niagara, screw.
Punches, s. e. 36", 48", 60", 72" thts.
Punch, s. e., Badger, 7" thrt., 1 1/2"x1 1/2".
Punch, No. 13 Niagara hand power.
Punch, Rapid, 28" thrt., 1 1/2"x1 1/2", m. d.
Punch & shear, No. 17 Badger comb.
Punch & shear, d. e. 16" thts; 1 1/2"x1 1/2"
with angle & bar shear blades, m. d.
Punch & stake riveter, No. 123-C.
Toledo boilermakers.
Riveters, 1-AA, 3-A, 5-B, hi. speed.
Rolls, 30"x14", 31 1/2"x3".
Rolls, hand, 31"x2" P. S. & W.
Screw machine, No. 0 G B. & S.
Shaper, 7" Rhodes, vert. ram, m. d.
Shaper, 16", Cin., b. g., crank.
Shaper, 20" G. & E., b. g., vise.
Shaper, 24" G. & E., gear box, s. p. d.
Shaper, 25" S. & M., b. g., crk., A-1.
Shear, 42"x8" Niagara, 18" gap.
Shear, 42"x10 ga. Niagara, 16" gap.
Shears, 3" & 1" Lennox, throatless.
Shear, foot, 30"x20 gauge.
Shears, Alligator, 1 1/2", 2", 2 1/2" & 3".
Shear, alligator, No. 2 Badger, 2".
Shear, rotary, 12" thrt., cap. 10 ga.
Shear, rotary, 16 ga., Yoder, 24" thr.
Shear, squaring, 8"x14 ga. power.
Shear, squaring, 60"x14 ga. Canton.
Shear, 10"x16 ga. Ohl power.
Slotter, 15" Dill, for motor drive.
Tappers, No. 2 Garvin, vertical.
Tube cutter, Fox 2 1/2" cap.
Turret lathe, 28" Gisholt, 9 1/2" h. s.
Turret lathe, 26"x7 1/2" h. s., Libby.
Wheel press, 60-ton W. S., 34"x8 1/2".

USED AND REBUILT MACHINERY

FOR SALE BY

Interstate Machinery Co., - - 130-2 So. Clinton St., Chicago, Ill.	
Bulldozer, No. 2 Williams & White.	Press brake, 10' 3/16" D. & K. steel.
Keyseater, No. 2 Mitts & Merrill.	Shaper, 26" Stockbridge p. d. f., b. g.
Lathe, 11"x3' Sheldon q. c. g., m. d.	Shear, 10' 14 ga. Bertch m. d., comp.
Press, No. 5 Bliss Styles b. g.	Stake riveter, 62" Kling.
Press, 68ton Clev. gap frame b. g., o. b.	Welder, 25 KVA Thompson spot.

FOR SALE BY

United Machinery & Supply Co., 1241 Walton Ave., St. Louis, Mo.	
Bolt cutters, 1 1/2" & 3"	Miller, 1 1/2 B Milwaukee universal.
Drills, radial 3/4" & 1" m. d.	Shaper, 18" crank back geared.
Hammer, Little Giant No. 20 m. d.	Punch, No. 5 H. & J. horizontal.
Lathe, gap 14"x8'	Punch & shear, 1/2" in 1/2" double.
Lathe, Seneca Falls 12"x6'	Wheel press, 50 ton m. d.

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.	
Drill, 6-spindle H. & W., b. b.	Lathe, 20"x10' LeBlond q. c. g.
Drill, 2-spindle Leland Gifford.	Lathe, 18"x6' Ryerson q. c. g.
Grinder, 18" bench, table feed.	Miller, No. 1 P. & W. bench.
Gear hobber, No. 1 Adams.	Miller, No. 2 Rockford plain.
Lathe, 14"x6' Hendey q. c. g.	Power press, No. 18 Bliss, o. b. i.

FOR SALE BY

James J. Gouse - - 361 Atlantic Ave., Boston, Mass.

Drill, 4-sp. L-G No. 2, variable speed, motor head, 220 v., power feed to all spindles, 2 spindles, back geared.

Lathe, 18"x20' L. & S. sel. hd., 16' centers, 2 car., pan, pump, rear tl. blks.

Press, F. F. double crank, 1 1/2" stroke, die space 12", 18,000 lb.

300 other tools in stock. Inquiries solicited.

FOR SALE BY

The E. L. Esley Machinery Co.	
Telephone Randolph 9191 551 W. Washington Blvd., Chicago	
Brake, 8', No. 18 gauge, Robinson.	Press, No. 7-A Niagara.
Press brake, 10' No. 10 gauge Ohl.	Press, No. 4 Loughbough-Jordon.
Presses, No. 165-B Consolidated grd.	Shears 10' 3/16" cap. Niagara m. d.
Presses, Nos. 19 and 21 1/2 Bliss.	Shears 11' No. 14 gauge Niagara.
Presses, No. 5 Toledo, o. b. i.	Shear, 52" No. 16 gauge Niagara ft.

FOR SALE BY

Strafer Machinery Company, 14th and Provost St., Jersey City, N. J.

HEAVY PRESSES

Ferricute 200 ton 82" double crank.	No. 59 Toledo double back geared.
Ferricute 70" geared double crank.	No. 75 1/2 Bliss fly wheel type.
No. 77 1/2 Bliss double back geared.	400 ton Watson Sullman hydraulic.

MISCELLANEOUS.

Boring bars, portable, 4"x8'.	Lathe, 40"-72"x15' Fay Scott gap.
Brake, Geo. Ohl, 8'.	Pipe machine, 6" Saunders b. d.
Compressor, 8"x6" I.-R. horiz. m. d.	Planer, 48"x16' Pond 4 heads.
Grinder, disc No. 8 Badger, 30" b. b.	Planer, 48"x12' D. & H. open side.
Hammer, 400 lb. Chamber. air steam.	Squaring shear, 10' 14 ga. Niagara.
Keyseater, No. 5 Mitts & M. 25" str.	Squaring shear, 8' 14 ga. L. & N.

USED AND REBUILT MACHINERY

FOR SALE BY

Foster Machinery Company,

2613 E. 73rd St., Cleveland, Ohio

Blue print machine, "Wickes".
Drill, No. 2 Bausch multi-spindle.
Draw bench, 12' Waterbury-Farrell.
Hoists, elect., 3, 5 & 10 ton Euclid.
Lathe, 16"x10' Whitcomb & Blaisdell.
Lathe, 19"x12' Le Blond heavy duty.
Riveter, 3-A High Speed, 3 A.H.D.

Riveters, air, 30 ton & 50 ton Hanna.
Rotary planer, 50" Cleveland.
Shaper, 24" Gould & Eberhardt.
Shear, 12"x14 ga. Loy & Nawrath.
Turret lathe, No. 3-A Warner &
Swasey univ., chucking equip.
Welder, National butt, cap. 1".

FOR SALE BY

The Elyria Belting & Machinery Co.,

Corner Williams and Buckeye Streets,

Elyria, Ohio

Cold saw, No. 4 Cochrane-Bly.
Presses, No. 5A Toledo plain.
Press, straight side Toledo, d. b. g., 16" stroke.
Punch presses, Bliss and Rockford, 1" to 2".
Punch presses, Nos. 1, 2 & 3 Rockford.
Punch, double end, equipt with 7½ h. p. motor, arch. jaw, 12" throat, 1" thru 1".
1000 Machine Tools. Send for free catalog.

FOR SALE BY

Joseph Hyman & Sons

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Stamping Press Specialists. 1200 Presses In Stock.
No. 6 Toledo, open back inclinable, flywheel, weight 7,000 lbs.
No. 78 Toledo, gap frame, single crank, geared, weight 18,000 lbs.
No. 204-D Toledo, gap frame double crank, geared, weight 17,500 lbs.
No. 4-K Bliss, knuckle joint embossing, 75 tons pressure, weight 5600 lbs.
No. 1½-B Bliss, d. a. toggle, double geared, friction clutch, weight 10,200 lbs.
No. 138 Bliss, double crank, fly. 79" bet. uprights, weight 15,000 lbs.
No. 5-B Bliss, double crank, geared, tie rod, 48" bet. uprights, wgt. 20,000 lbs.
No. 6½ Bliss, double crank, geared, 54" between uprights, weight 28,000 lbs.
Shear, No. 4120 Stoll, 10'x3/16" capacity, overdriven, geared, wgt. 18,500 lbs.

FOR SALE BY

Norton-Broadway Mchy. Co., Sixth & Baymiller Sts., Cincinnati, O.

BORING MILLS.

3½" Lucas horizontal, A 1 shape. | 24" and 36" Bullard New Era.

DRILLS AND RADIALS

6' American, single pulley. | No. 5 Fox multiple spindle, 32x45".
4' Morris & American. | 24" Barnes camel back.

LATHES.

60"x70"x16" New Haven, raised, \$875. | 21"x12' Sidney.
30"x14' Prentice. | 30"x20' American, geared head.
24"x12' American.

PLANERS AND SHAPERS.

32"x12' Detrick & Harvey openside. | 24" Gould & Eberhardt, shaper, \$400.
48"x10' Belmer, 4 heads, \$775. | 24" Potter & Johnston, \$500.
55x42"x6" Gray widened, \$500.

MISCELLANEOUS.

Pipe machine, 12" Curtis. | Shears, 8x3/16" Ohi.
Presses, No. 166 Consolidated, No. | Shear, 72" Hilles & Jones, ¼ cap. gap,
164 Toledo. | with motor.
Rolls, 6"x½". | Shears, 60"x½" Williams-White.
Rolls, 12"x½" Niles. | Shears, 10' Streine, 14 gauge.
Slotter, 36" Dill, motor drive. | Turret lathe, 6" Gisholt.

More than 300 other Lathes, Planers, Milling Machines, Shapers, Drills,
Brakes, Boring Mills and other Machine Tools in stock.

Tell us what you need or what you have for sale.

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FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, N. S.

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Boring mill, 36" Niles vert., 2 hds.
Drill, D-5 Colburn, 4" capacity.
Drill, 4 spindle Colburn, 2 1/2" cap.
Lathe, 16"x8" Hendey, tie bar, taper.
Lathe, 30"x16" L. & S., d. b. g.
Lathe, 48"x20" Betts-Bridge, a. c. m. d.
Miller, No. 2 Cincinnati universal.
Miller, No. 2 1/2 Rockford, vert. att.
Miller, No. 2-AS Milwaukee, s.p.d.
Press, Toledo No. 4 o. b. i., geared
4" stroke, 3450 lbs.

Press, No. 0 Yankee, bench type.
Pipe machines, 2" & 6" Oster, m. d.
Press, No. 3 Niagara, o. b. i.
Press, Ferracute o. b. i., 12,000 lbs.
Planer, 36"x36"x8" Cinti., 2 heads.
Riveters, Nos. 2-A, 3-A Hi-Speed.
Saw, No. 2 Ryerson friction, 3-50-220.
Shear, circle, Bliss, cap. 14 gauge.
Screw mach., No. 4 W. & S., bar fd.
Tapper, nut. 6 apdl. Acme, cap. 1/2"

FOR SALE BY

Brown Machinery Co.,

2333 N. 9th St., St. Louis, Mo.

Drills: 24", 26" and 32" Barnes and
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Grinders: No. 6 Besly dbl. spindle;
No. 220 Badger auto. disk; 12x30"
Modern, plain s. c. c. s.; No. 12
Brown & Sharpe, universal, tool.
Hammer: 40 lb. Bradley, helve; 50 lb.
Mayer upright.

Lathes, 30"x12" Blaisdell; 26"x12"
Putnam; 20"x10" Bradford, taper
attachment; 16"x8" Lodge & Ship-

ley; 16"x6" Monarch; 12" and 14"
Seneca Falls, q. c. g.
Millers, No. 2 Hendey-Norton, univ.;
No. 3 1/2 Fox; No. 4 Hendey Lincoln.
Press, No. 7 Zeh & Hahneman,
Nos. 1, 3, 4 Loshbough Jordan.
Punch, Cleveland C 1/2 in 1/2"; Rock
River Style L 1/2 in 1/2".
Shear, 50" 10 ga Excelsior gap.
Threaders: 1/2" Geometric; National
1 1/2" double head.

Write for prices; send us your inquiries for shop equipment and sheet metal
working machinery. We have the stock.

FOR SALE BY

McDonald Machinery Co.,

1535 N. Broadway, St. Louis, Mo.

Bolt mchs., Landis & Acme 1 1/2".
Boring mill, Lucas No. 21 horizontal
Boring mills, 4 Bullard 42" low price.
Brake, D. & K. 6" 10 gauge, power.
Drills, Cincinnati-Bickford 3" & 3 1/2"
radials, gear box drive.
Gear hobber, G. & E. 24".
Grinders, B. & S. No. 2 universal;
B. & S. No. 2 surface, complete.
Grinders, Landis 16"x42" universal.
Keyseater, Mitts & Merrill No. 2.
Lathes, Hendey 14"x6" q. c. g. grd.
head; Davis 22"x10" q. c. g.;
Sidney 16"x6" q. c. g. LeBlond
16"x8" Whitcomb-B. 22"x8" q. c. g.
Monarch 16"x8"; C. & J. 15"x8";
Superior 18"x8"; L. & S. & Cinti.
16"x6", q. c. g.; American 22"x10"
q. c. g. geared hd.; American 16"x6"
q. c. g.; Lehmann 18"x7" q. c. g.
Milling machines, Van Norman
No. 2 duplex; Ohio No. 20 plain.
LeBlond No. 3-H; Brown & S.
No. 3; B. & S. No. 3-B pl., s.p.d.;
American No. 1 1/2; Kemp Smith No. 1
Cleve. No. 2 pl.; Ohio 24"; Hendey
1-B; Kemp. No. 3; Cin. & B. & S.

No. 1 1/2; Ohio No. 29 universal;
B. & S. No. 8 vertical; Cincinnati
18" mfg; Becker No. 3 vertical.
Milling and drilling mchs., Knight
No. 1 1/2 with power feed, vertical.
Pipe machine, Curtis 3 1/2" to 12" m. d.
Planers, Gray 28"x28"x6", 1 head;
Cincinnati 36"x36"x18" 2 heads.
Punch presses, Swaine No. 63 straight
side geared, Federal Nos. 1, 2, 3
and 4; Bliss No. 19; Sidney No. 2,
Swaine No. 32 & No. 33 o. b. i.
Screw machine, P. & W. No. 2 1/2 hand;
Foster No. 3 hand; Woods No. 2
tilted turret, Milholland No. 4 b.g.
hand; Foster No. 7 hand b. g.
Shapers, S. M. 16", 24"; Queen City
24" back geared; G. & E. 16", b.g.;
Niles traveling head; Milwaukee
16" b.g.; Walcott 20" b.g.; S. & M.
& Ohio 26" b.g.; Ohio 16", Cin-
cinnati 20", b.g.; Rhodes 7", Queen
City 16" b.g.; Potter & J. 16".
Square shears, Niagara 62" 18 ga.;
Niagara 52" 18 ga. & 36" 14 ga. pwr.
Turret lathes, Warner & S. No. 2A.

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FOR SALE BY

The Geo. H. Bowman Company, 308 Euclid Ave., Cleveland, Ohio

Drill presses, Mueller radial.
Press, No. 3 Consolidated.
Press, No. 3 Consolidated.
Press, No. 24-A Cleveland horning.
Press, No. 64 Consolidated.

Press, No. 92 Toledo.
Press No. 40 Michigan.
Press, No. 84-A. Bliss.
Press, No. 406 toggle draw Bliss.
Press, No. 202 Toledo.

FOR SALE BY

Bennett Machinery Co.

30 Church St., New York City

Radial drill, 4' Cincinnati-Bickford.
Lathe, 18"x8" Prentice, geared hd.
Miller, No. 3S Cincinnati.
Miller, No. 2 B. & S. vert. att.

Punch and shear, No. 23 Pels
BLUEFG.
Turret lathes, No. 4 Warner & S.

100 other tools in stock.

FOR SALE BY

The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Automatic, No. 00 B & S high speed.
Automatic, 14" Cone, practically new.
Bending roll, 25' H & J. 3" cap.
Boring mill, 72" Ridgeway, m. d.
Column facer, 14" Espen-Lucas.
Crane, electric travel, 15 ton a. c.
Drill, 4' Cincinnati-Bickford, radial.
Gear cutter, 48" No. 4 B. & S., new.
Grinder, 30"x162" Landis, m. d.

Hammer, No. 6N Nazel, motor dr.
Hammer, 3000 lbs. Chambersburg.
Hammer, 1100 lb. N.-B.-P. sgl. fr.
Lathe, 36"-40"x32" McCabe, belt.
Lathe, 60"x36" Bridgeford.
Pipe mchs. 2, 4, 6, 8 & 12" belt & m.dr.
Punch and shear, 24" Southwark,
arch. jaw, cap. 4"x4".
Shear, 84" Newbold, 4" cap., 27" gap.

FOR SALE BY

Midwest Equipment Co.,

628-30 W. Lake St., Chicago, Ill.

Drill press, No. 2 Avey, 4 spindle, 15" overhang, 99% new	\$ 450.
Gear hobber, No. 3 Barber Coleman, with arbor and gears	250.
Lathe, 18"x8" Rockford, motor driven	450.
Press, No. 4 Walsh o. b. i.	265.
Punch press, No. 5 Consolidated, o. b. i.	325.
Punch and shear No. 52 Beloit	125.
Radial drill, 30" Fordick, single pulley drive	350.
Shaper, crank, 16" Smith & Mills	100.
Shear, power square, 50" Excelsior, 10 ga., 15" gap, like new	300.
Welder, spot, 5 k. w., new	100.
Planers, Lathes, Screw Machines, Air Compressors, Woodworking Machines.	

FOR SALE BY

The Jones Machine Tool Co.,

Front & Pike Sts., Cincinnati, Ohio

Boring mill, No. 32 G. & L. horiz.
Gear cutter, No. 13 B. & S.
Gear hobber, No. 12 Barber-Col.
Grinder, No. 1 Diamond surface.
Grinder, No. 2 W. & M. surface.
Keyseater, No. 3 M. & M.
Lathe, 36"x14" Bradford.
Lathe, 32"x12" Boye-Emmes.
Lathe, 24"x12" Boye-Emmes.
Lathe, 18"x36"x10" LeBlond, gap.
Miller, No. 2 Cincinnati. hi-power.

Miller, No. 2-M Cincinnati, sgl. pulley.
Miller, No. 3 Cincinnati. hi-power.
Miller, No. 2 B. & S. Univ. comp.
Press brake, 10' Ohl, 10 gauge.
Punch presses, inclinables, s. s. and
stiff backs, various sizes.
Radial, 3' American, sgl. pul. drive.
Radial, 5' American, enclosed hd.
Square shears, foot and power, vari-
ous sizes and capacities.
Wheel press, 100 ton Niles hyd.

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**We continue our offering of
hundreds of high grade modern
machine tools at prices that can-
not be duplicated.**

—A Few More Picked At Random—

No. 1-A Warner Swasey Turret Lathe.....	\$750.00
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No. 2 Leland-Gifford 4 spindle Drill.....	160.00

All tools can be seen in operation. Here is your opportunity to purchase tools at prices that cannot be duplicated. They won't last long at these prices.

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The Indianapolis Machinery & Supply Co., Inc.

1960 S. Meridian St.,

Indianapolis, Indiana

Phones: Drexel 4163-4-5

All tools offered subject to prior sale.

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54"x24" H. S. & G. Grd. Hd. M. D.
42"x24" American Grd. Hd. late type.
24"x22" Bradford, cone drive.
30"x20" American Geared Head M.
D. late type.
46"x18" N. B. P., Qk. Ch., H. D.
46"x16" H.S. & G. Grd. Hd., late type
20"x14" Hendey Yoke Hd. Tap. Att.
30"x10" Lodge & Shipley, 3 S. C. D.
D. B. G. Q. C.
20"x10" American Grd. Hd. late type.
20"x8" Am. Grd. Hd., M. D., late t.
18"x8" Reed-Prentice Grd. Hd. Q. C.
20-30"x7" Monarch Helical G. H. Gap
16"x6" Lodge-Shipley Sel. Grd. Hd.
8" Ames Precision, complete.

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Nos. 50, 60, 65 and 70 Heald.
No. 4-A Landis Crankshaft Grinder.
6"x18" Landis Plain, Self Contained.
No. 11 Brown & Sharpe Plain.
Walker Single Stroke Surface Grinder.
10"x52" Landis Plain, Self Con.
No. 14 Gardner Disc Grinder.
12" Pratt & Whitney Surface.
No. 2 Bath Universal Grinder.
No. 2 Brown & Sharpe Surface.
No. 3 Brown & Sharpe Universal.
No. 13 B. & S. Universal Tool Room
Grinder, complete equipment.

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No. 12 Barber-Colman Hobber, dbl.
overarm, late type.
18-H Gould & Eberhardt Hobber.
6", 11", 18" Gleason Gear Generators.

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1/4" Landis Double-Spindle.
1 1/2" Landis Sgl.-Sp., Grd. Hd. m. d.
1" Acme Class "A" Single-Spindle,
2" Landis Sgl.-Sp., lead screw attach.
2" Landis Double-Spindle.

Boring Mills

24" Bullard Rap. Prod. New Era Hd.
36" Bullard New Era A. C., motor dr.
60" Niles Boring Mill, 2 heads.
No. 32 Ciddings & Lewis Horiz.

Milling Machines

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No. 4 Cincinnati H. P. Pl. S. P. D.
No. 4-B Milwaukee Plain; Dbl. Over-
arm; motor-in-base; 98% new.
No. 3 Cincinnati, Plain.
Nos. 3; 5-B; 6 Becker Vertical.
No. 3 Cincinnati Vert. H. P., S.P.D.

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CINCINNATI, OHIO

Nos. 2 and 3 Cincinnati High Power
Plain. S. P. D. flange nose.
No. 2 Cincinnati Universal H. P.
flange nose; S. P. D.
No. 1 1/2-B Milwaukee Universal.
Double Over-arm; S. P. D.
5" Pratt & Whitney Automatic.
18" Cincinnati Plain Mfg. Miller.
18" Cincinnati Automatic, M. D.
24" Cincinnati Automatic, M. D.
No. 33 Kempnith Automatic.
No. 3 Rockford Rigidmil; 98% new.
No. 30 Sunstrand Rigidmil; Hydraulic
Feeds; brand new.
No. 7-H Becker Lincoln type.
No. 1 Knight Miller and Driller.
No. 3 & 3-E Lees-B. Thread Millers.

Planers

24"x24"x8" Gray Planer.
27"x27"x8" Woodward & Powell.
36"x36"x10" Gray, 2 heads.
26"x26"x12" Whitcomb-B., 2 heads.
Radial and Upright Drills
3" & 4" American Tr. Grd. SPD, MD
3 1/2" American Triple Purpose, M. D.
No. 2 Colburn Mfg. H. D. 2-spindle.
3-sp. Avey High Speed Ball Bearing.
6-spindle Rockford 20" B. C. P. F.
No. 40 Natco Straight Line Multi.

Shapers

7" Rhodes Shaper & Slotter.
16" Cincinnati, A. C. Motor Drive.
20" Steptoe, S. P. D.
20" Gould-Eberhardt, High Duty.
24" Potter-Johnson M.D. thru gear box
24" Cinti. h. d. mtr. dr. thru gear box.

Miscellaneous

2" Acme Class "A" S. S. Bolt Cutter.
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25 ton Henry & Wright Dieing Mche.
50 ton Henry & Wright Dieing Mche.
80 lb. Bradley Cushion Helve Hammer
Nos. 0 and 3 Baker Keyseaters.
Nos. 1 & 2 Davis Keyseaters.
6 spindle 1/2" Acme Nut Tapper.
No. 5 Toledo O. B. Incl. Presses.
15 Ton Hercules Broaching Press, m. d.
No. 76 Toledo Open Bk. Cap Frame.
Wickes Punch & Shear, 48" throat,
1 1/4" thru 1 1/4".
High Spd. Rivet., 1AA; 1 1/2B; 2AHD.
No. 2 Garvin Vertical Tapper.
No. 2-A W. & S. Turret Lathes.
No. 4 W. & S. Univ. Turret Lathes.
100 K. W. Federal Butt Welder.
Shuster Wire Mches. 1/4" to 3/8" Caps.

Dependable Machine Tools

BORING MILLS

- 24" and 36" Bullard Rapid Production, with turret and side heads.
 24" and 34" Bullard New Era, with turret and side heads.
 30" Gisholt Vertical, 4 step cone drive, with 5 hole turret on cross rail, p. r. t.
 37" Niles, arranged for motor drive, with 2 heads on rail.
 72" Bick. Vert. Bor. & Tur., 6 step cone dr., belted pwr. feeds, 2 swivel hds. on rail.
 72" Cincinnati Heavy Duty, belt drive, 2 swivel heads on rail, late type.
 72" Niles Vertical, 6 step cone pulley drive, 2 swivel heads on rail.
 Rockford Horizontal Boring and Drilling Machine, 2 step cone drive.

DRILLS

- Allen, Avey, Cleveland, Fostick, Henry & Wright, Leland & Gifford, Sipp High Speed Ball Bearing, single and multiple spindle types, 8" and 12" overhang.
 2 1/2" and 3" Morris Plain Radial Drills, gear box drive.
 2 1/2", 3, 3 1/2", 4", 5" American Triple Geared Pl. Radial sgle. pul. dr. thru gear box.
 3", 4, 5" 6, Amer. Tri. Pul. Pl. Radial, sgle. pul. dr. thru gear box, late types.
 3" Fostick High Speed Ball Bearing Sensitive Radial Drill, belt drive.
 4", 5", 6" Cincinnati-Bickford Plain Radial, single pulley gear box drive, late type.
 4", 5" Dresser Plain Radial Drills, single pulley gear box drive.
 4" Dress Universal Radial Drill, single pulley gear box drive.
 4" Fostick Plain Radial Drill, single pulley gear box drive.
 5" Reed-Prentice Plain Radial Drill, arranged for variable speed motor drive.
 6" Niles-Bement-Pond Plain Radial Drill, motor drive, complete with d. c. motor.
 7" Fostick Plain Radial Drill, cone pulley drive.
 No. 1 W. F. & John Barnes Horizontal Radial Drill.
 No. 0 Fox Multiple Spindle Drill Press, rectangular head.
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 Nos. 2, 3, 12 Barber-C. Gear Hobbers.
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 No. 18H & 18HW G. & E. Gear Hob.
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 27"x16" American Geared Head, q. c.
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 16"x8" L. & S. q. c., 3 step cone drive.
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- 4-24" and 36" No. 25 Foote-Burt.
- 3-4-Spd. Nos. 2, 4, 17 Foote-Burt.
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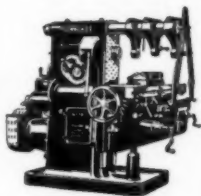
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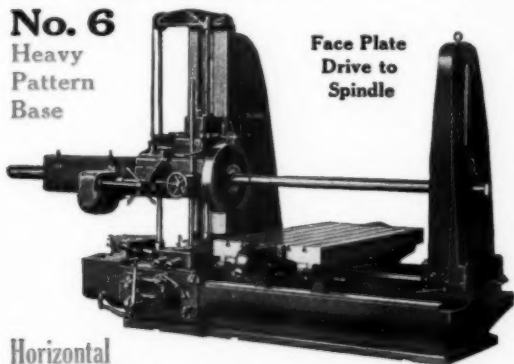
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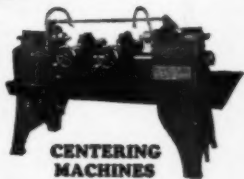
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